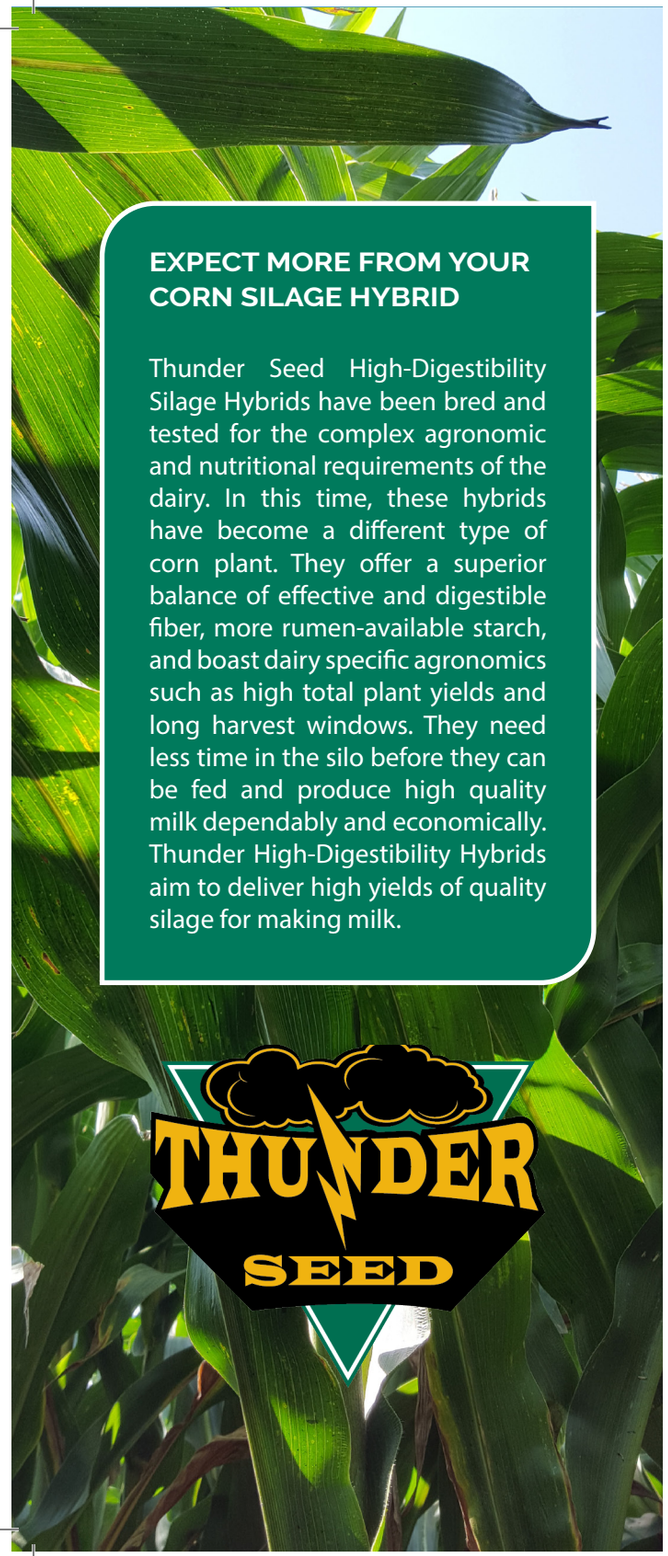


## EXPECT MORE FROM YOUR CORN SILAGE HYBRID

Thunder Seed High-Digestibility Silage Hybrids have been bred and tested for the complex agronomic and nutritional requirements of the dairy. In this time, these hybrids have become a different type of corn plant. They offer a superior balance of effective and digestible fiber, more rumen-available starch, and boast dairy specific agronomics such as high total plant yields and long harvest windows. They need less time in the silo before they can be fed and produce high quality milk dependably and economically. Thunder High-Digestibility Hybrids aim to deliver high yields of quality silage for making milk.

THUNDER SEED

## STRONG AGRONOMICS

Environment and management decisions have an impact on all crops, but Thunder High-Digestibility Silage Hybrids offer some unique agronomic benefits in addition to the excellent agronomics that are required of any commercial hybrid:

- Our silage hybrids have tremendous spring vigor and produce a very thick canopy. This quickly reduces the amount of sunlight that reaches the ground for the competing weeds, even when they are planted at the recommended 28,000 to 30,000 plants per acre.
- These hybrids are more likely to flex than break in a foul weather event. They have been bred to produce ears that are positioned relatively low on tall flexible stalks.
- They have been selected to resist ear molds that can be responsible for the mycotoxins that ruin feed.

## HIGH TOTAL PLANT YIELD

Thunder Silage-Specific Hybrids are bred to produce a high yield of digestible fiber and starch. Their extra leaves above the ear increase the leaf area index of the plant, allowing for more sugar production. These sugars are converted to starch in the ear. They have flex-type ears and their extra leaves help to develop and fill those ears with starch. Extra leaves also increase tonnage. A High-Digestibility Silage crop stands taller and fuller than dual purpose hybrids that are planted in the same location. Thunder Silage-Specific Hybrids must be planted at low populations of 28,000 - 30,000 plants per acre to realize their optimal yield, but because each plant produces more dry matter than a dual purpose hybrid, you can realize top yields with less seed.

## LONG HARVEST WINDOW

Thunder Silage Hybrids are bred to extend the ideal silage harvest window. They are selected for a slower and complimentary rate of dry down in both the plant and ear components. The whole plant stays near the ideal silage moisture level of 65% moisture and 50% kernel milkline for a longer period of time compared to dual purpose hybrids. Dairy producers are more likely to chop and store the best quality feed with this extended harvest window.

## SHORT STORAGE PERIOD

Thunder Silage-Specific Hybrids can be fed right after fermentation - after about 30 days in the silo. They have been selected to produce large, flat, soft, moist kernels that have more floury starch inside. During silage chopping these kernels fracture easily into small particles which require less starch softening by the lactic acid in the silo before the starch is available for rumen digestion. Their increased leaf area also has the capacity to convert more sunlight to sugars in the plant during photosynthesis, so their stalks contain more sugars for lactic acid formation in the silo. This shortened storage period allows dairy producers to reduce dry matter losses and storage space requirements.

## HIGH STARCH DIGESTIBILITY

Thunder Silage Hybrids are bred to have ears with digestible kernels. Unlike grain varieties, a their ear is composed of large, flat, soft kernels that dry down slowly on digestible cobs. The kernels have a higher proportion of floury white starch than the hard, vitreous yellow starch typical of grain kernels. These larger, wetter floury kernels break up easily into smaller pieces during harvest and during the cow's chewing. Smaller starch particles increase the sites of digestion for rumen microbes as well as increase the rumen retention time for a boost in milk production.

## HIGH STARCH CONTENT

Thunder Silage Hybrids are bred to have large, energy-rich flex ears. When planted at their recommended population of 28,000-30,000 ppa, they will realize their best starch yield.

## HIGH FIBER DIGESTIBILITY

Thunder High-Digestibility Hybrids have three unique characteristics that boost their fiber digestibility:

1. They have a lower ear position on the total stalk. The ear is the heaviest part of the plant, so the below-ear portion of the stalk must be heavily lignified to support its weight. By lowering the ear, the more digestible above-ear portion of the stalk is increased while maintaining an adequate below ear stalk for good standability.
2. When grown at recommended populations, they have thicker, more digestible stalks since the proportion of soft inner stalk is increased relative to the more lignified outer rind.
3. They have been bred to have softer stalks than dual purpose hybrids since these silage-specific products will always be harvested earlier in the season than a grain crop.

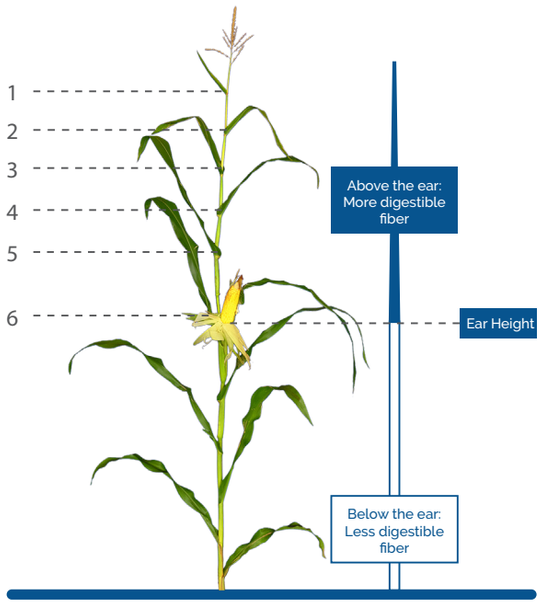
## RATION TYPE ADAPTABILITY

Many dairies balance and feed multiple rations for cows that are at different stages of maturity and lactation. A Thunder Silage Hybrid can form the basis of a ration that is fed to heifers, early lactation, late lactation, and dry cows.

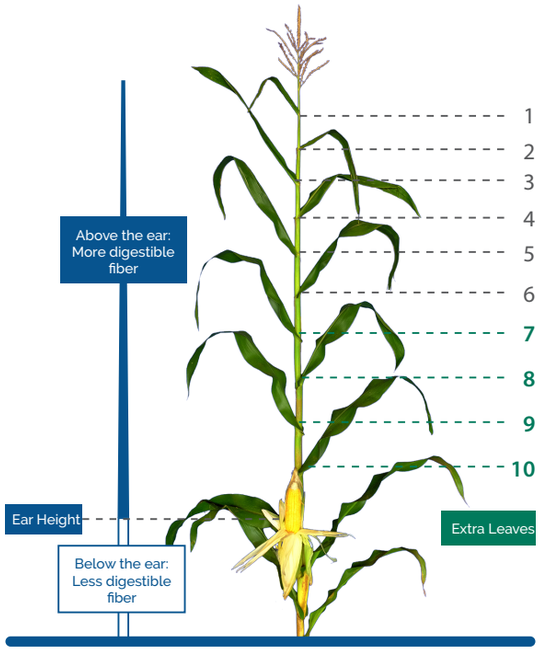
## EXCELLENT FEED QUALITY

Thunder Silage Hybrids make quality milk and help keep a herd healthy. When planted at the recommended population of 28,000-30,000 ppa, they should produce a feed with an appropriate balance of digestible fiber and digestible starch for milk production, while providing adequate effective fiber for healthy rumination and efficient rumen retention time.

## DUAL PURPOSE




## HIGH-DIGESTIBILITY SILAGE




### WHAT HAPPENS WHEN GRAIN HYBRIDS ARE GROWN FOR SILAGE?

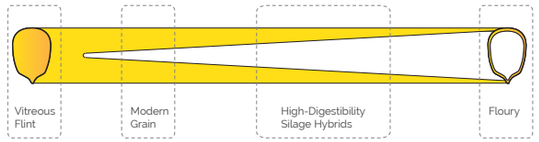
Dual purpose hybrids have been bred to have less digestible fiber and starch in order to accomodate the commercial grain system. They have stiff stalks for late season harvest and small, hard, durable kernels that were designed to stay intact during combining, elevating and shipping. Their kernels are fast-drying to save on drying costs. None of these qualities are ideal for making feed.

There are several drawbacks to planting a dual purpose hybrid for silage. As the plant reaches silage maturity, the kernels dry rapidly and get hard. While the kernels may have a high test weight, much of the starch is indigestible. Also, the speed of kernel drying shortens the harvest window. When the kernels reach a silage appropriate moisture, the plants are too wet to chop. What's the suggested solution? Harvest the crop at optimal whole-plant moisture, process the silage to break-up some of the hard starch, and let it sit in the bunker for four to six months to let the silage acids make the starch more available. But this brings a whole new set of problems. Processing the silage reduces the effective fiber and does not guarantee ideal starch digestibility. Storing silage for long periods results in dry matter losses and increased storage space requirements. The combination of these plant characteristics and the necessary harvesting processes results in a silage product with relatively poor silage security and feed quality.

### PLANT HIGH-DIGESTIBILITY SILAGE!

They have a lower ear position than dual purpose hybrids, giving them a natural boost in fiber digestibility!

High-Digestibility Silage Hybrids have been bred to have large, flat, slow-drying kernels that contain more floury starch. All of these kernel characteristics help them to fracture easily into small particles during chopping and cow chewing. The benefits? A longer harvest window, a shorter storage period, less kernel processing (which helps to retain effective fiber), and higher starch digestibility!




High-Digestibility Silage Hybrids have been bred to have kernels that contain more floury starch for a boost in starch digestibility. Dual purpose hybrids have a modern grain type kernel that contains mostly tough, vitreous starch.

### TEN WAYS TO BOOST YOUR BOTTOM LINE WITH THUNDER HIGH-DIGESTIBILITY SILAGE:

1. Buy 15% Less Seed
2. Maximize Tonnage
3. Maximize Your Harvest Window
4. Chop Faster with Less Fuel
5. Reduce Storage Space by 25%
6. Minimize Dry Matter Losses
7. Reduce Kernel Passage
8. Reduce Ration Additives
9. Enjoy High Productivity
10. Increase 3.5% Fat Corrected Milk

THUNDER SEED

HIGH-DIGESTIBILITY CORN SILAGE