Green snap, also called brittle snap, is the breakage of a corn plant usually prior to tassel during the rapid growth period of corn from about the V5 (5 visible leaf collars) – R2 (silk).

When does it happen?
When the corn plant reaches about the V5 growth stage the growing point of the corn plant moves above ground while the plant also transitions to the developing nodal root system. The faster root development increases the plant's ability to take up water and nutrients to support the very rapid growth that occurs before the start of reproductive growth. During rapid growth the plant becomes more susceptible to wind increasing the threat of stalk breakage at nodes.

Green snap most commonly occurs following periods of ideal growing conditions when corn is growing extremely fast. The growth stages when corn is most susceptible are from about V5 until just prior to tassel. Corn is most susceptible at times during the day when the environment is not stressing the corn for moisture, therefore nighttime or morning wind events are often the most devastating.

Why does it occur more in some parts of the corn belt?
In the Northern Plains, temperatures and moisture are usually very good for corn growing in June and early July, but summer temperatures can also lead to strong thunderstorms with winds in excess of 60 or 70 mph. The rapidly growing plants during this part of the growing season are often extremely brittle and susceptible during these high wind events.

Yield Impact
Earlier in the season, when plants are in the V5 – V8 growth stage, breakage usually occurs at ground level. This is below the growing point so that plant will not contribute to yield. However, the earlier in the season that the green snap occurs the more time the neighboring plants have to compensate for the reduction in stand.

The other key time when snapping occurs is from about V12 – Tassel. When strong winds occur during this time period in corn development snapping usually occurs at a node either at the site of primary ear development or the node immediately above or below. The remaining plant will often produce an ear shoot, but due to the lack of leaf area to feed the ear the contribution to overall yield is significantly reduced. In addition, this is very close to the time of tassel emergence and pollination so the neighboring plants do not have time to compensate for the reduction in yield contributing plant stand. It is not uncommon in very strong wind events during this time period to reduce yields by half or more.

Ultimately, yield loss from greensnap is generally proportional to the number of affected plants. For example, 25 percent green snap will result in a 25 percent yield reduction.
What genetic factors cause green snap?
Genetics play a role in hybrid susceptibility to green snap, but the timing is also very critical. Once a corn plant nears the silk stage (R1), the corn plant starts putting more energy into lignin in the cell walls which reduces the risk of green snap. Other concerns such as root lodging may still occur but the green snap risk is greatly reduced. Since timing is so critical to green snap, planting date, maturity, and even different growing degree units required to reach R1 within maturities can play a big role in green snap susceptibility. There are many circumstances where the same hybrid planted in an adjacent field a week later or earlier will not snap, but a field in the vulnerable growth stages can be devastated.

What can be done to reduce risk
According to Iowa State University, “factors that increase early season growth tend to increase breakage susceptibility, such as high N, P, and K rates; spring-applied N; tillage; and high organic matter.”¹ It is an important balance- one must supply adequate nutrition to provide late-season stalk strength, but ideal growing conditions allow for rapid growth which leaves plants temporarily vulnerable to green snap.

A key consideration is to plant a range of maturities and genetics because of the role that timing and genetics plays in green snap risk. In some situations, splitting the planter with two products can lessen the effects of green snap, because the two products may respond to the high winds differently.

Green snap insurance can also be purchased to provide financial protection. In addition, seed companies provide ratings for products that are a good tool to use when selecting hybrids if green snap is a concern in your area.

¹ https://crops.extension.iastate.edu/corn/production/management/mid/greensnap.html