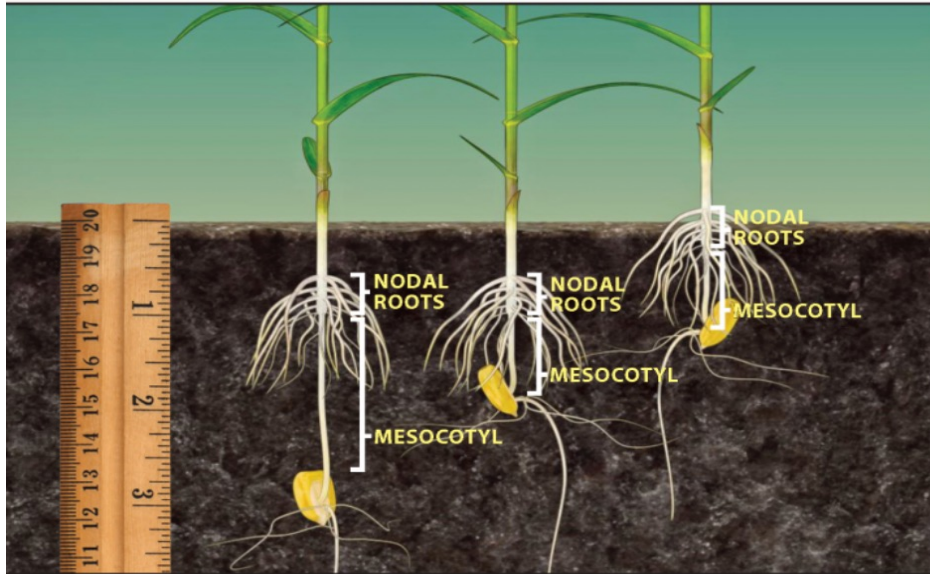


Uniform emergence is more important than uniform population.

MAIZE HYBRID SEED RESEARCH

- Staggered emergence has biggest impact on yield . Plants that emerge later than the main crop can have a 4-40% yield loss.
- Uneven population (within reason) has less impact because most varieties can yield flex to largely compensate for gaps.
- ❖ The main root system of the corn plant, starts above the seed. From the nodal roots.
- ❖ Shallow planting = more variables, especially temperature and moisture = more uneven emergence
- ❖ **Ideal Plant Depth** – aim at 50 mm (2 inches = second knuckle on your pointer finger)
- ❖ **Minimum Planting Depth** - never plant at less than 38mm (1.5 inches) as the mesocotyl is ~19 mm long, then there are 5 rings of nodal roots ~19 mm, making a total of 38 mm. Shallow planting leads to these nodal roots above ground, they need to be in moist soil to grow.
- ❖ **Maximum Planting Depth** – don't plant deeper than 65 mm as it takes too much energy for the plant to emerge.



CORN PLANTED AT VARIOUS DEPTHS

LEFT:

Corn planted too deeply takes more energy to emerge, resulting in a smaller, later emerging plant.

MIDDLE:

Corn planted at the ideal depth allows room for the mesocotyl and nodal roots to grow within soil.

RIGHT:

Corn planted too shallow forces the root system above the soil surface, exposing roots to the elements.

- ✓ Uniform seed quality and high germination quality, significantly helps uniform emergence.
- ✓ Uniform seed of good quality is important. Seed size is not.
- ✓ Insist on both warm and cold test results on every seed lot with testing less than 6 months old.
- ✓ **Cold Tolerance** – so important we put the test result on the bag.