



Wisconsin Fast Plants™

Seed Stock Profile

Non-Purple Stem, Hairless

Single, recessive trait: *anl/anl*

Plants of this stock appear brilliant green, with no purple coloration on the stems, leaves, or other plant parts. They have few or no hairs (*trichomes*) on the stems and leaves.

Non-purple Stem plants do not produce anthocyanin, a purple pigment found in Standard Wisconsin Fast Plants™. The lack of anthocyanin causes the plants to appear a brilliant green color. The Non-purple phenotype is conditioned by a single, recessive gene (*anl*). In the homozygous condition (*anl/anl*), no anthocyanin is produced.

Plants that produce anthocyanin show purple color on the stems and hypocotyls, under cotyledons, and at the leaf tips and hydathodes. Their genotype is either *anl/ANL* or *ANL/ANL*.

Research indicates that the absence of trichomes may be controlled by a single gene (*hir*) in Wisconsin Fast Plants™. In the homozygous, recessive form (*hir/hir*), the plants are virtually hairless. The number of hairs, however, is conditioned by many genes (*polygenic trait*).

Length of life cycle: 35-45 days
Days to flowering: 14
Average plant height at day 14: 15 cm



7-day-old plant
Non-purple Stem,
Hairless
(*anl/anl*)

14-day-old plant
Non-purple Stem,
Hairless
(*anl/anl*)

Growing Tips

- 24-hour fluorescent light, water, and fertilizer are essential for Wisconsin Fast Plants™. Refer to *Growing Instructions* for more details.

The Hypocotyl Hypothesis

Objective: Explore the effect of gravity on Wisconsin Fast Plants™.

Time Required: 30 min setup, then wait 4-24 hours before observing.

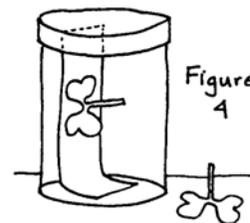
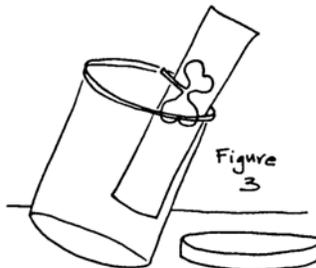
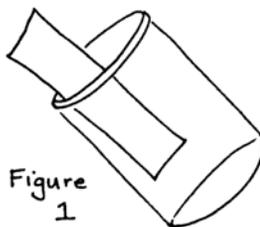
Procedure:

1. Predict how a hypocotyl, cut from a seedling, will bend in the dark.
2. Place a paper towel (wick strip) on the inside of a black film can (Figure 1).
3. Wet the paper towel. Leave no more than 3-4 drops of water in the can (Figure 2).
4. Cut a 3-4 day old seedling at soil level. This should leave the majority of the hypocotyl attached to the cotyledons.

5. Pull the wick strip 1/3 of the way out of the can and place the cotyledons of your cut seedling on the strip so that the hypocotyl is facing away from the strip (Figure 3).

6. Push the strip back into the can until it is below the opening lip of the can. Snap on the film can lid (Figure 4).

7. Wait 4-24 hours, then check the hypocotyl. Record your results and compare with your classmates.



CAROLINA®

Wisconsin Fast Plants™ Seed Stocks Available:
Standard • Purple Stem, Hairy • Non-Purple Stem, Hairless
Non-purple Stem, Yellow-Green Leaf • Yellow-Green Leaf • Petite
Rosette-Dwarf • Tall Plant • Variegated • F₁ and F₂ Genetic Stocks

To order Wisconsin Fast Plants™ materials and seeds:
Carolina Biological Supply Company, 2700 York Road, Burlington, NC 27215 1-800-334-5551
Ordering info: www.carolina.com/fastplants Activity ideas: www.fastplants.org