



# Wisconsin Fast Plants™

Seed Stock Profile

## Tall Plant

Elongated Internode  
Single, recessive trait: *ein/ein*

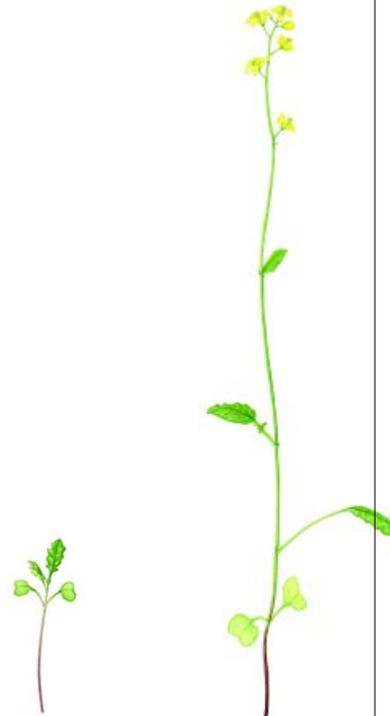
Tall plants produce up to 12 times more gibberellic acid (GA), a plant growth hormone, than Standard Wisconsin Fast Plants™. The excess GA yields elongated hypocotyls and stem internodes, so the plants are tall and spindly.

The tall phenotype is first apparent 2-3 days after germination, when the seedling hypocotyl continues to extend beyond the height of the Standard hypocotyl. The exaggerated elongation continues throughout the plant's development, yielding tall adults. Plants of this stock tend to be a lighter green than Standard plants.

The height of Tall Plants varies considerably; the shortest plants are similar in height to the tallest Standard plants.

Tall Plants originated from a naturally occurring mutation in Wisconsin Fast Plants™. The phenotype is conditioned by a single recessive gene (*ein*). In the homozygous, recessive condition, (*ein/ein*), gibberellic acid is greatly overproduced.

Length of life cycle: 35-45 days  
Days to flowering: 15  
Average plant height at day 15: 28 cm



7-day-old plant  
Tall Plant  
(*ein/ein*)

15-day-old plant  
Tall Plant  
(*ein/ein*)

## Growing Tips

- 24-hour fluorescent light, water, and fertilizer are essential for Wisconsin Fast Plants™. Refer to *Growing Instructions* for more details.
- The height of Tall Plants is influenced by temperature. Warmer temperatures will yield taller plants.
- Tall Plants will require staking after about 6 days of growth.
- Prior experience with growing Standard Wisconsin Fast Plants™ is useful for comparison with Tall Plants.

## How Tall is Tall?

**Objective:** Explore the effect of a plant growth inhibitor or a plant growth hormone on Tall Plant Wisconsin Fast Plants™.

**Time Required:** 7-40 days, depending on experimental design.

**Procedure:**

1. Predict how the plants will respond if a plant growth inhibitor (Cyocel® or B-Nine®) or a plant growth hormone (Gibberellic Acid, or GA) is applied to the soil or leaves. How will the plants respond to various concentrations of the substance? (To order Cyocel®, B-Nine®, or GA, call 1-800-334-5551.)
2. Think about what plant responses you plan to measure. *Ideas: Plant height, internode length (distance between leaf or flower axils), development time (for leaves, flowers, or seed pods), carpel length, seed number, or seed size. (Keep in mind that you'll have to pollinate the plants with a beestick if you plan to produce seeds.)*
3. Plant several Tall Plant seeds, following the *Growing Instructions*.
4. Apply a single drop of the plant growth inhibitor or hormone to the top of the first true leaf (not the cotyledons) or soil at days 7 and 10. Try testing the effect of several concentrations.
5. Record your measurements at days 7, 10, and 17 (or other appropriate days).
6. How did your plants respond to treatment with a growth inhibitor or hormone? Describe your observations.



Written by Wisconsin Fast Plants Program 2001. Layout by Sarah Lauffer. Color art by Alison Schroeder. Line art by Amy Kelley.

**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 • F<sub>1</sub> and F<sub>2</sub> 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](http://www.carolina.com/fastplants) Activity ideas: [www.fastplants.org](http://www.fastplants.org)