



United States Department of Agriculture  
National Institute of Food and Agriculture

# Rootin' around the MELNHE plots: biomass allocation in *Trillium erectum*

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# Introduction

- 2 views on root system response to nitrogen (N) addition: increase or decrease?
- Other *Trillium* species are particularly sensitive to N deposition (*T. undulatum*, McDonnell et. al. 2020)
  - *T. erectum* used because it is documented more consistently in our stands across Jeffers, Hubbard, & Bartlett than *T. undulatum*.

# Methods

- 0-3 specimens/plot (max 12/stand), collected from buffer
- Hemispherical photos taken using Google StreetMaps app.
- Each specimen dissected and dried at 60°C to constant weight.



Fig. 1: Stand C7, control—polar projection (F. O'Connor 2022)



Fig. 3: fresh rhizome with roots attached (F. O'Connor 2022).



Fig. 2: intact aerial parts, with inflorescence (F. O'Connor, 2022).

# Results To Date

g root / g shoot

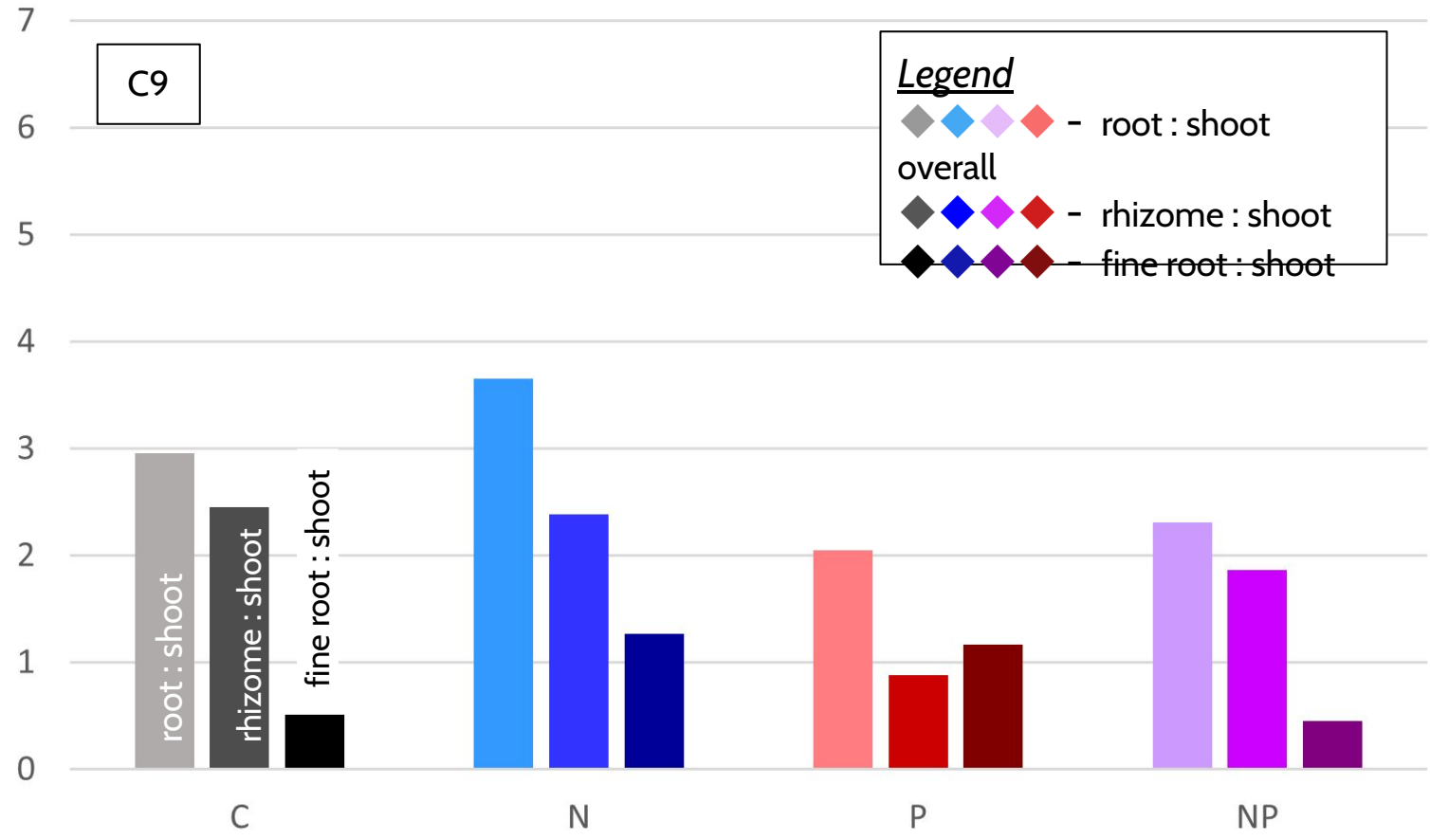
C9

**Legend**

- ◇ - root : shoot
- ◇ - rhizome : shoot
- ◇ - fine root : shoot

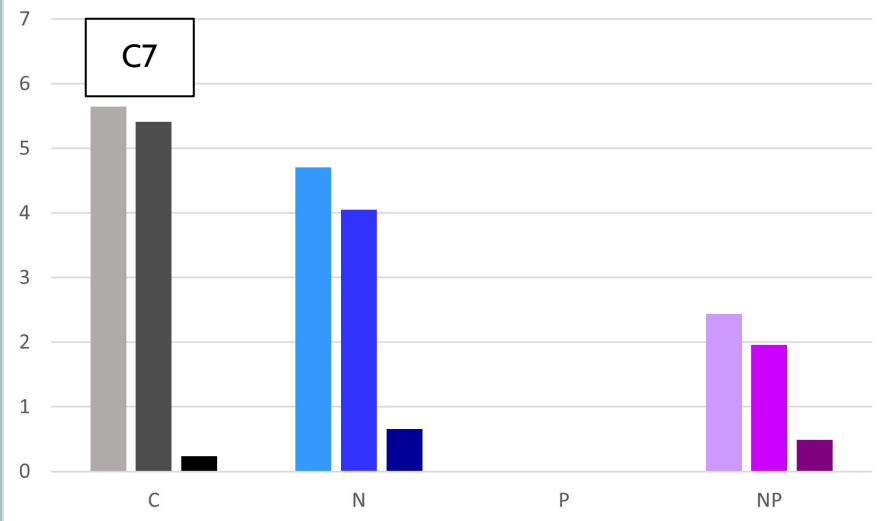
overall

- ◇ - root : shoot
- ◇ - rhizome : shoot
- ◇ - fine root : shoot

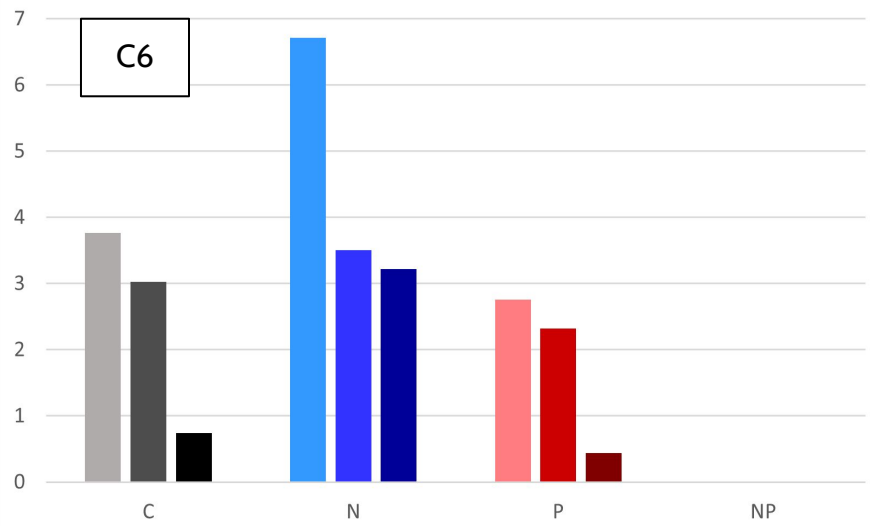


g root / g shoot

C7

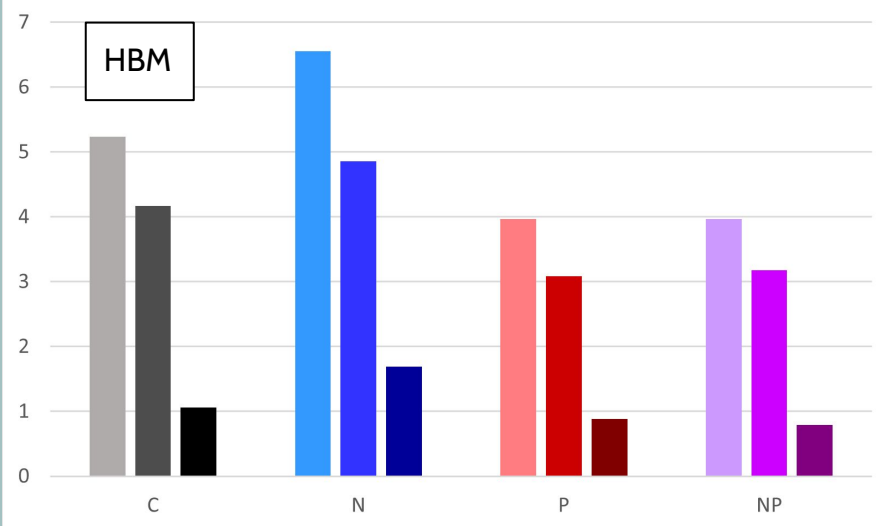


C6

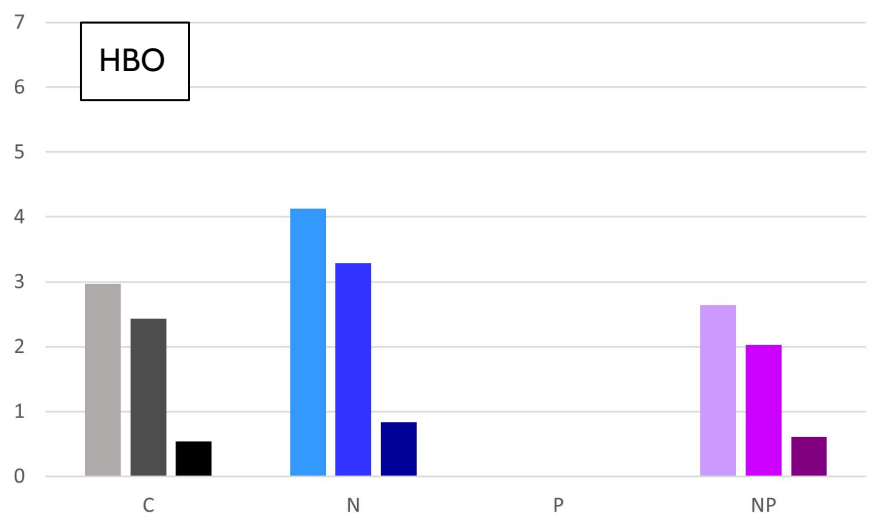


g root / g shoot

HBM



HBO



# Next Steps

- Collections in C4, C5, C8, JBM, & JBO
- Hemispherical photos:
  - Convert to polar projection, binarize using ImageJ Hemispherical 2.0 plug-in, analyze using Gap Light Analyzer (Arietta, 2020).
  - Use as a covariate & compare canopy cover by treatment.



## *Thanks to:*

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## *References:*

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