

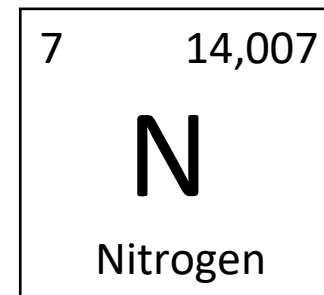
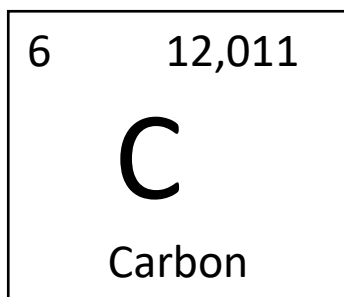
Effetto del rapporto Carbonio/Azoto sul metabolismo primario delle piante

L. Guglielminetti^a, T. Huarancca Reyes^a, A. Pompeiano^a, A. Scartazza^b, J. Yamaguchi^c

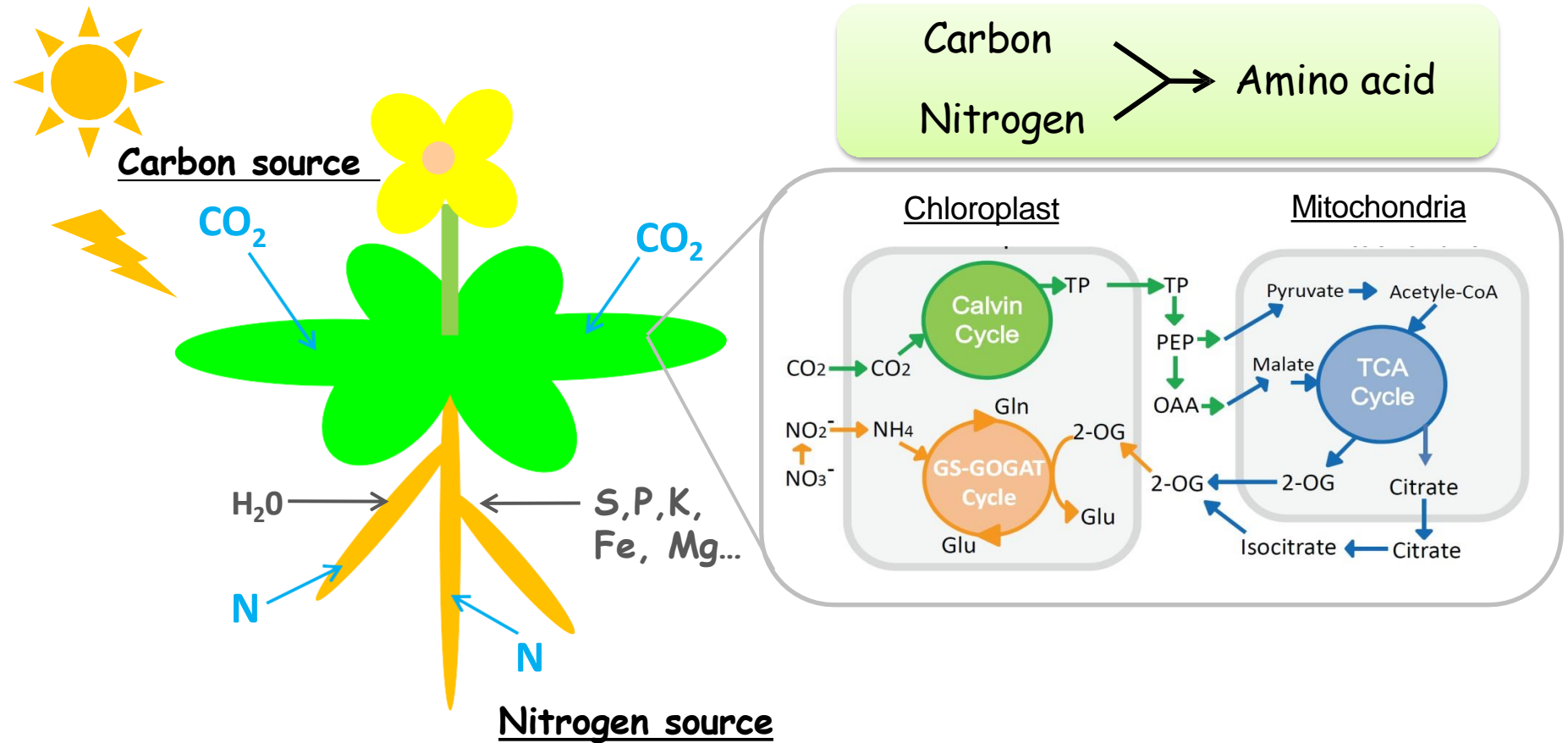
^aDipartimento di Scienze Agrarie, Alimentarie Agro-ambientali, Università di Pisa, Italy

^bIstituto di Ricerca sugli Ecosistemi Terrestri, CNR, Pisa, Italy

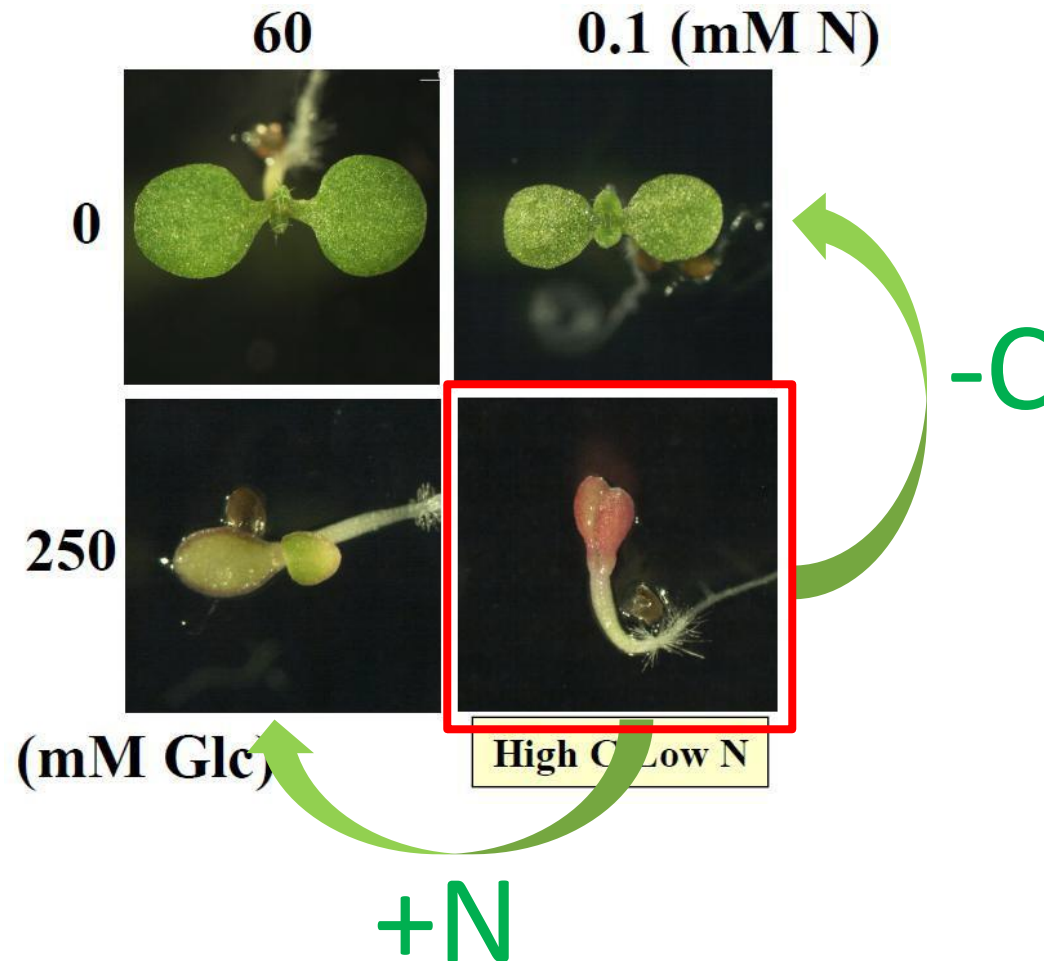
^cHokkaido University, Faculty of Science, Sapporo, Japan



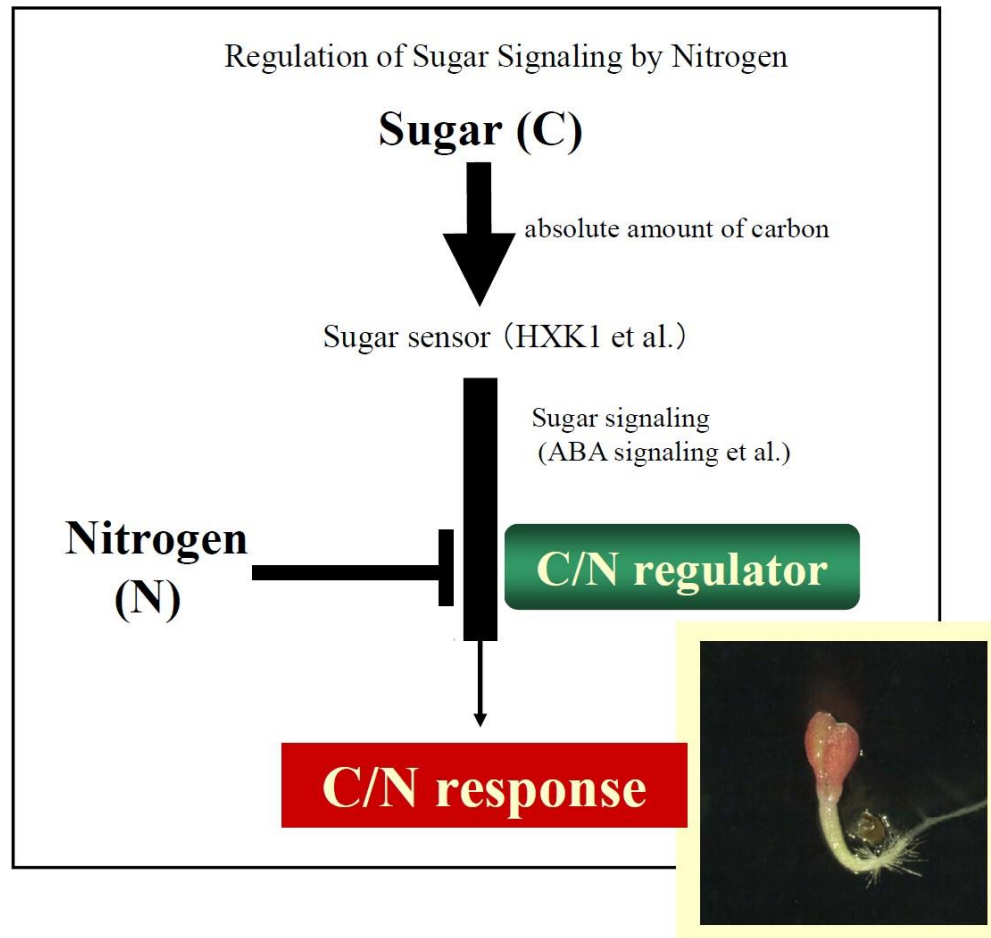
Crosstalk between Carbon (C) and Nitrogen (N) metabolism in higher plants



C/N regulates plant development

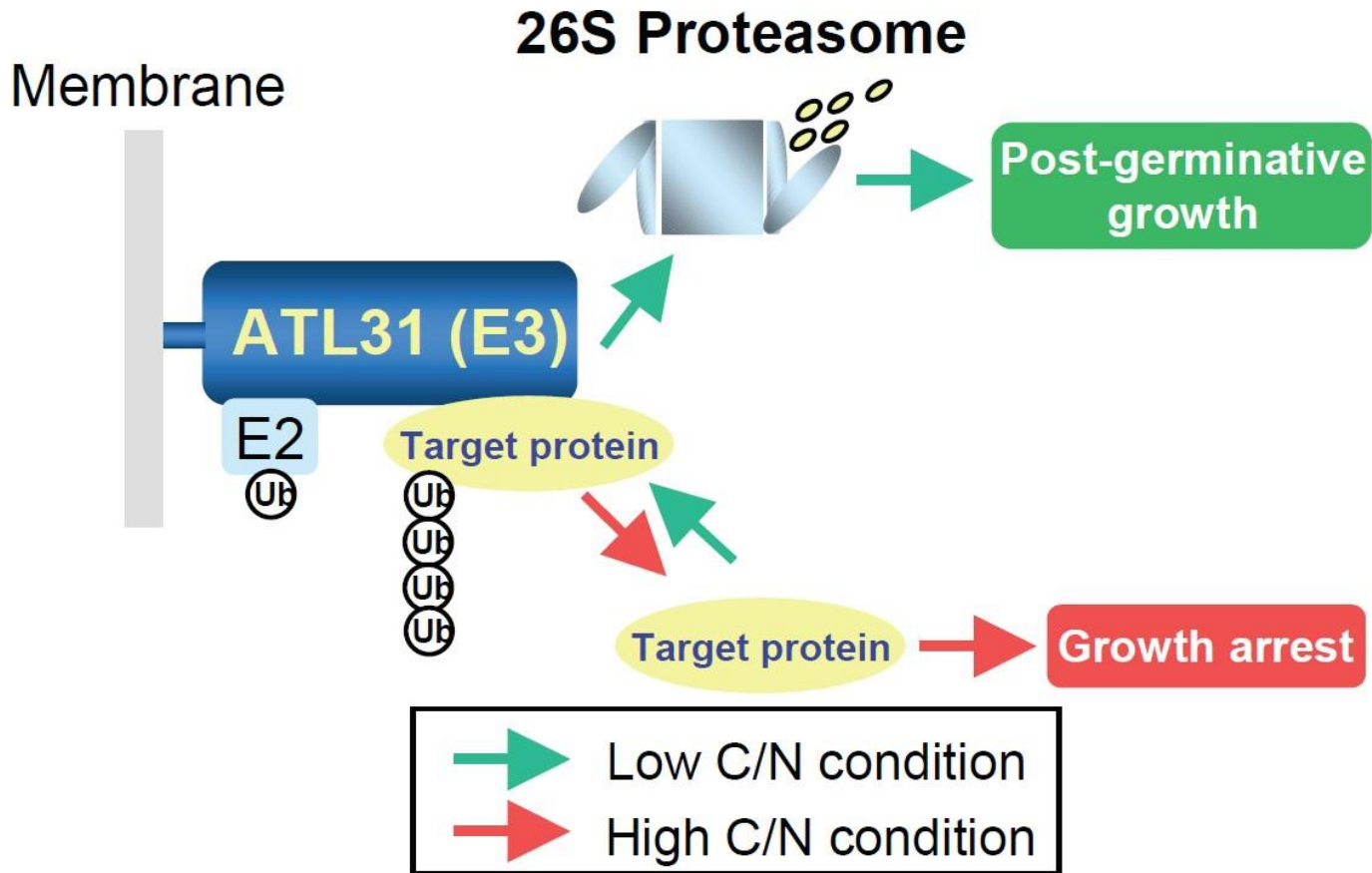


Crosstalk between Carbon (C) and Nitrogen (N) signaling in higher plants



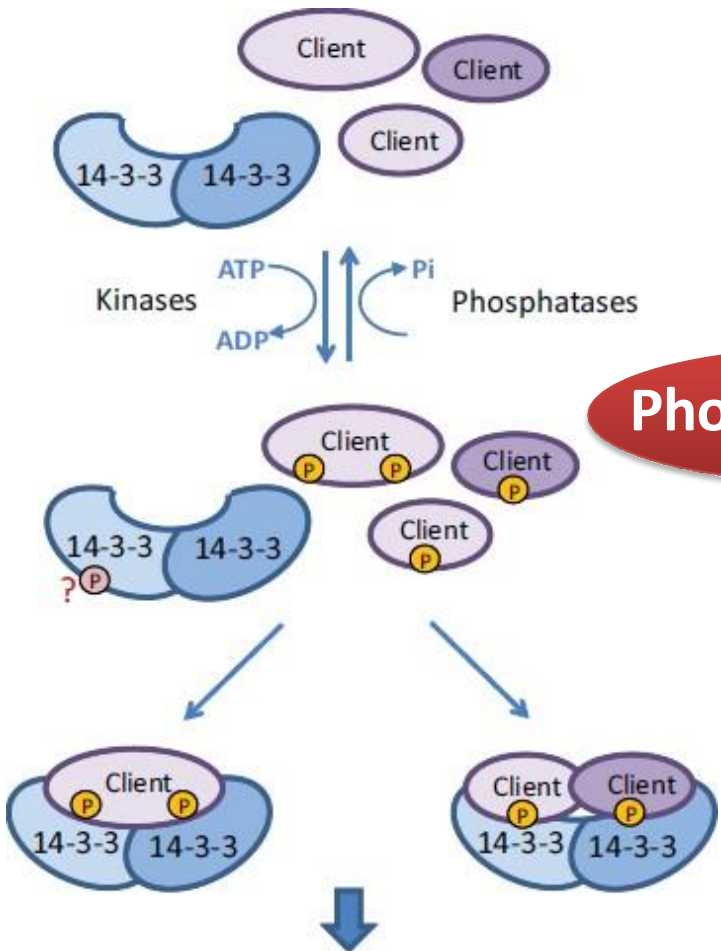
What is C/N regulator ?

Model of C/N regulation mediated by ubiquitin ligase ATL31



What is target ?

14-3-3 proteins have multiple function



Phosphorylation

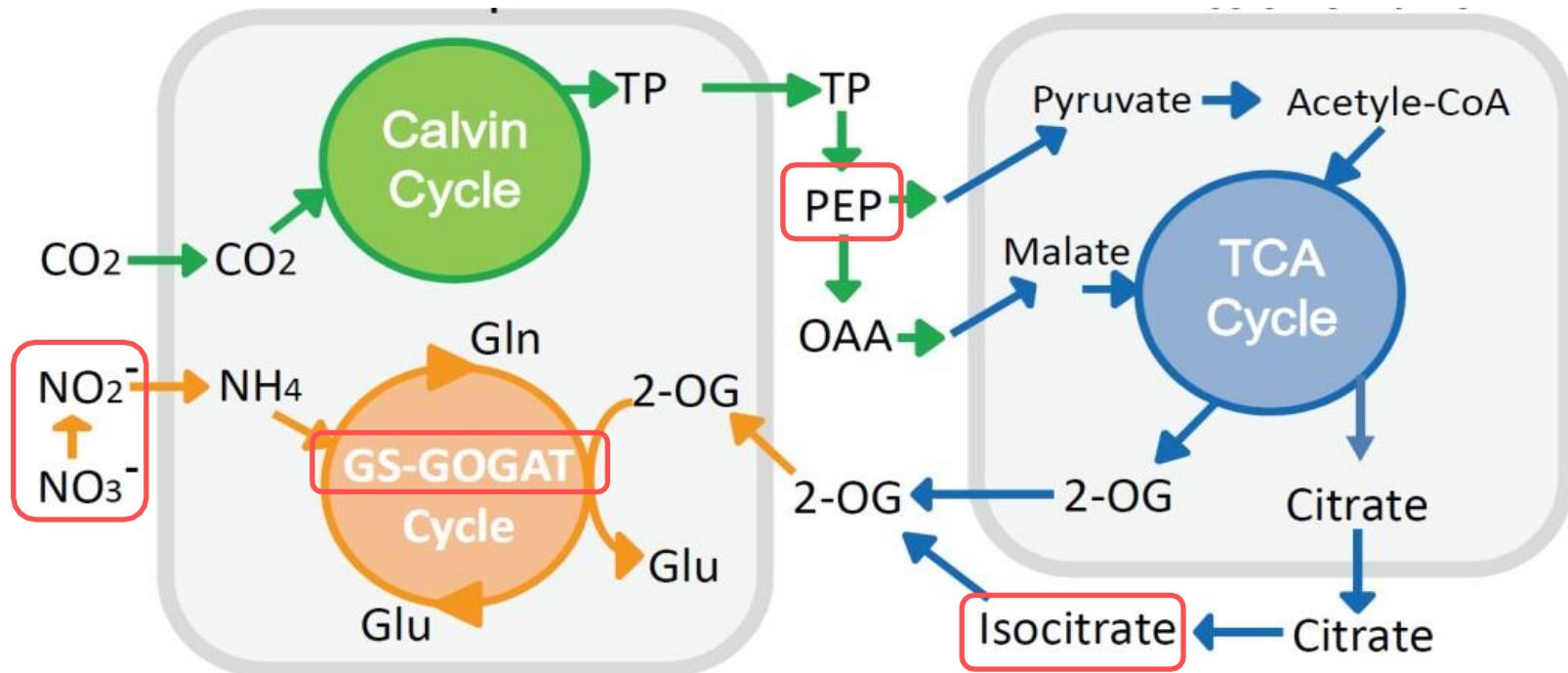
Regulation

- Enzyme activity
- Stability
- Sub-cellular localization

Potential Effects on Client Proteins:

- Conformational change
- Altered activity or stability
- Altered localization within the cell
- Altered interactions between clients

14-3-3 proteins regulate enzyme activities involved in C and N metabolism



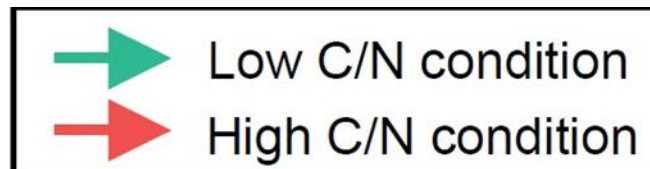
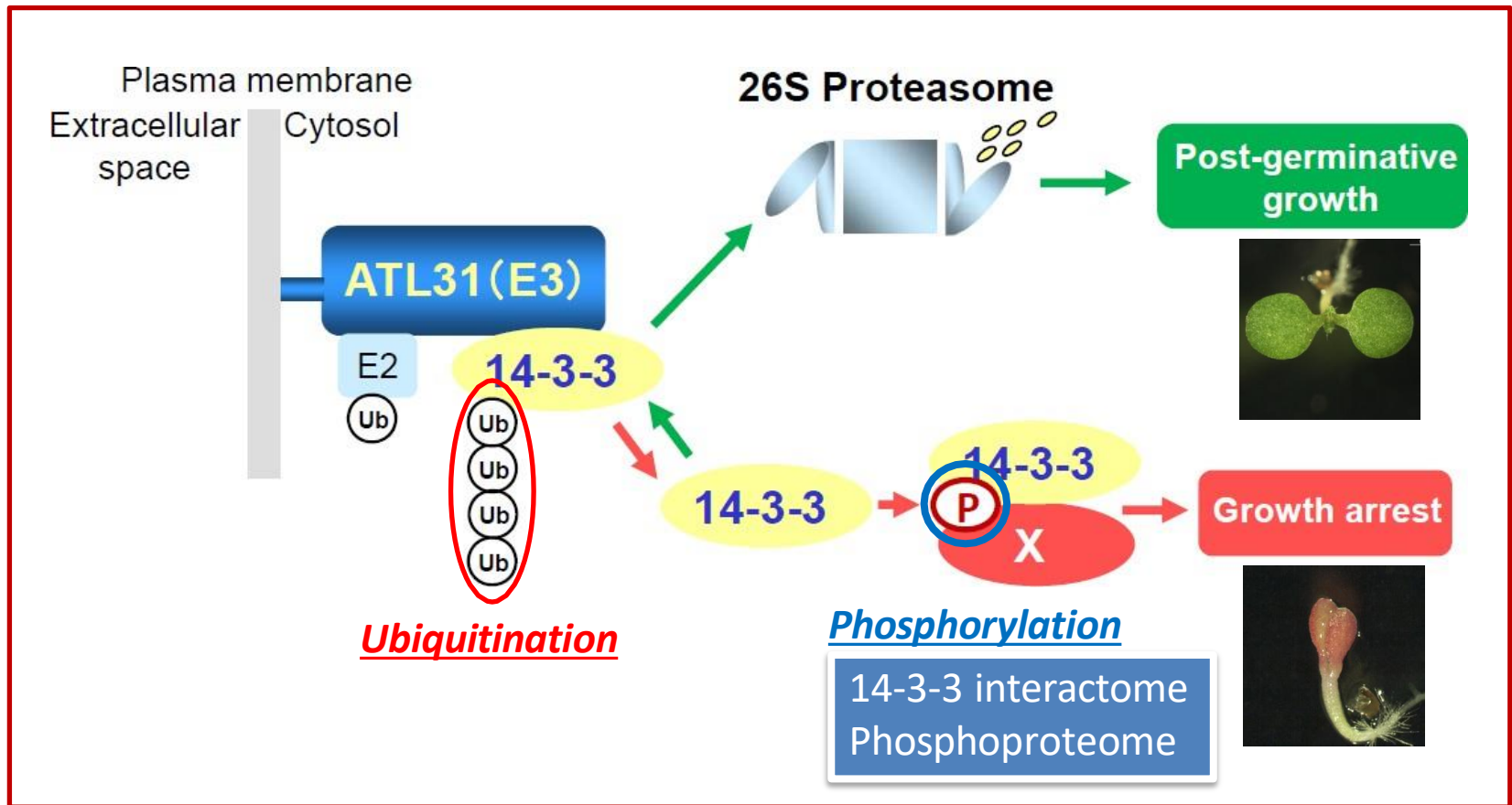
C-metabolism: Phosphoenolpyruvate carboxykinase

Sucrose phosphate synthase, Starch Synthase III

N-metabolism: Nitrate reductase, Glutamine Synthetase 1/2,

Glutamate receptor

Proposed model of C/N regulation mediated by ATL31



Ubiquitin Ligase ATL31 Functions in Leaf Senescence in Response to the Balance Between Atmospheric CO₂ and Nitrogen Availability in Arabidopsis

Special Focus Issue

Shoki Aoyama¹, Thais Huarancca Reyes¹, Lorenzo Guglielminetti^{1,2}, Yu Lu¹, Yoshie Morita¹, Takeo Sato^{1,*} and Junji Yamaguchi¹

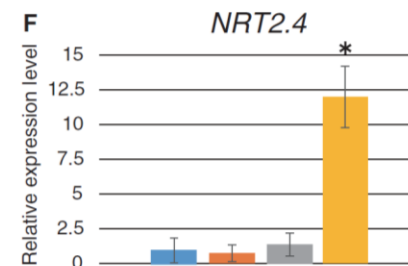
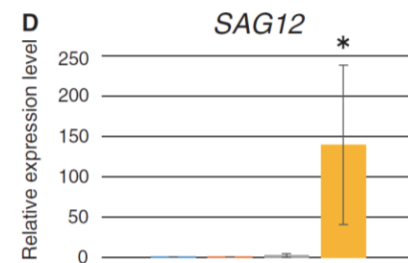
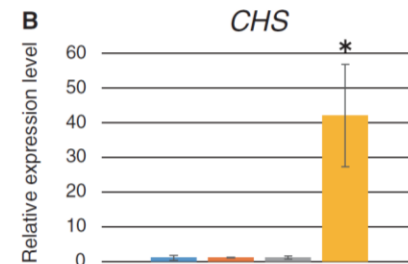
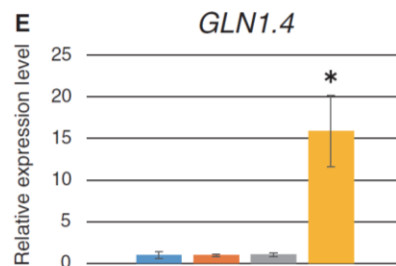
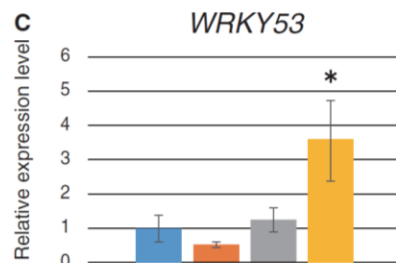
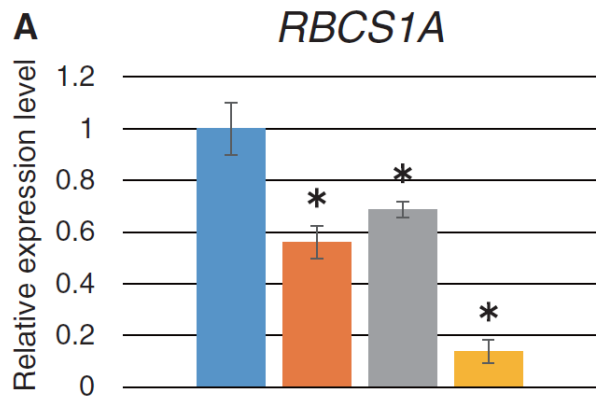
¹Faculty of Science and Graduate School of Life Science, Hokkaido University, Kita-ku N10-W8, Sapporo, 060-0810 Japan

²Department of Agriculture, Food and Environment, University of Pisa, Via Mariscoglio 34, I-56017 Pisa, Italy

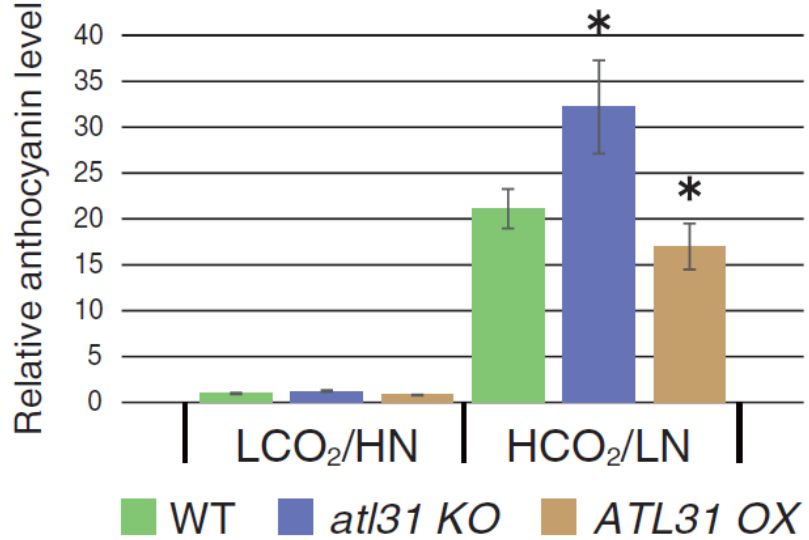
*Corresponding author: E-mail, t-satou@sci.hokudai.ac.jp; Fax, +81-11-706-3612.

(Received September 5, 2013; Accepted December 17, 2013)

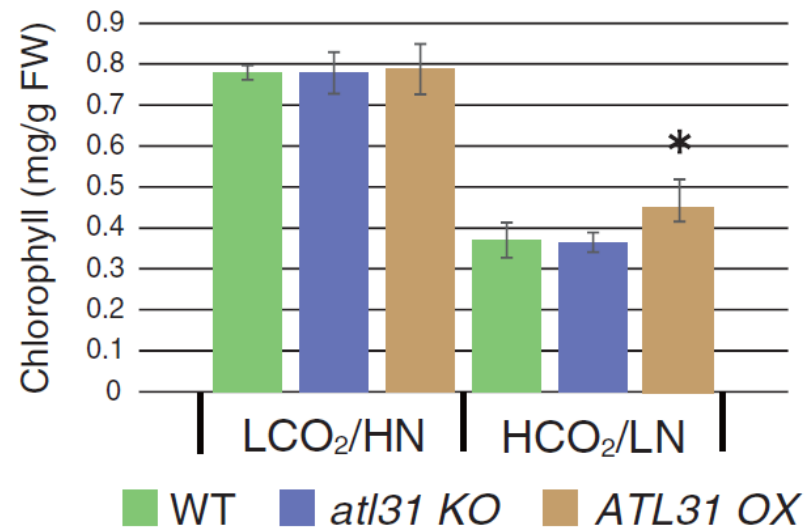




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Research article

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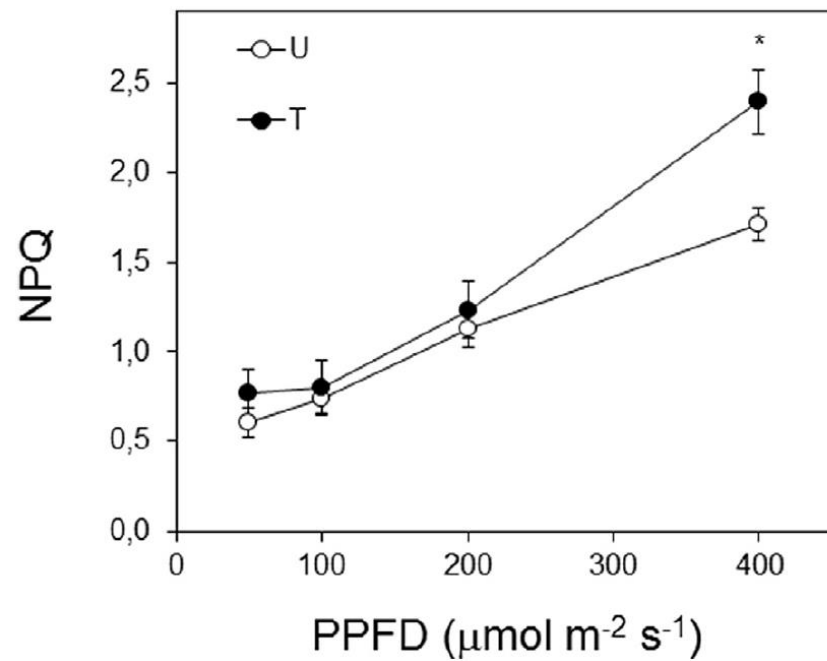
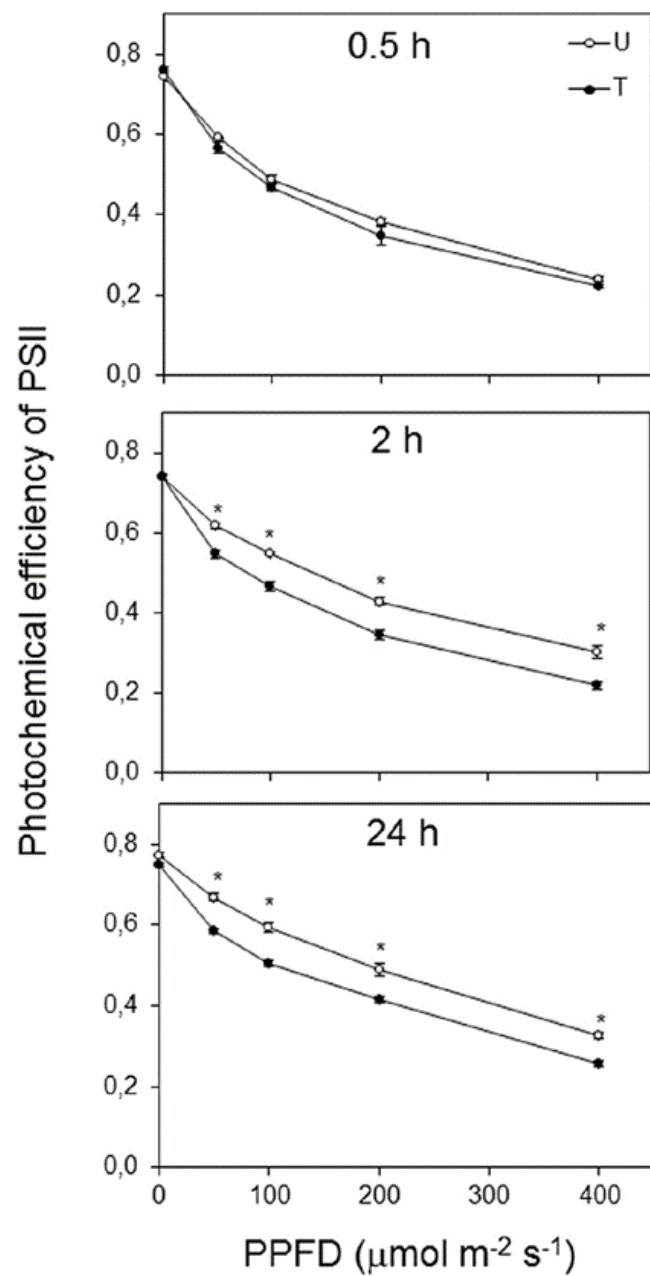
Thais Huaranca Reyes ^a, Andrea Scartazza ^b, Yu Lu ^c, Junji Yamaguchi ^c,
Lorenzo Guglielminetti ^{a,*}

^a Department of Agriculture, Food and Environment, University of Pisa, Via Mariscoglio 34, I-56017, Pisa, Italy

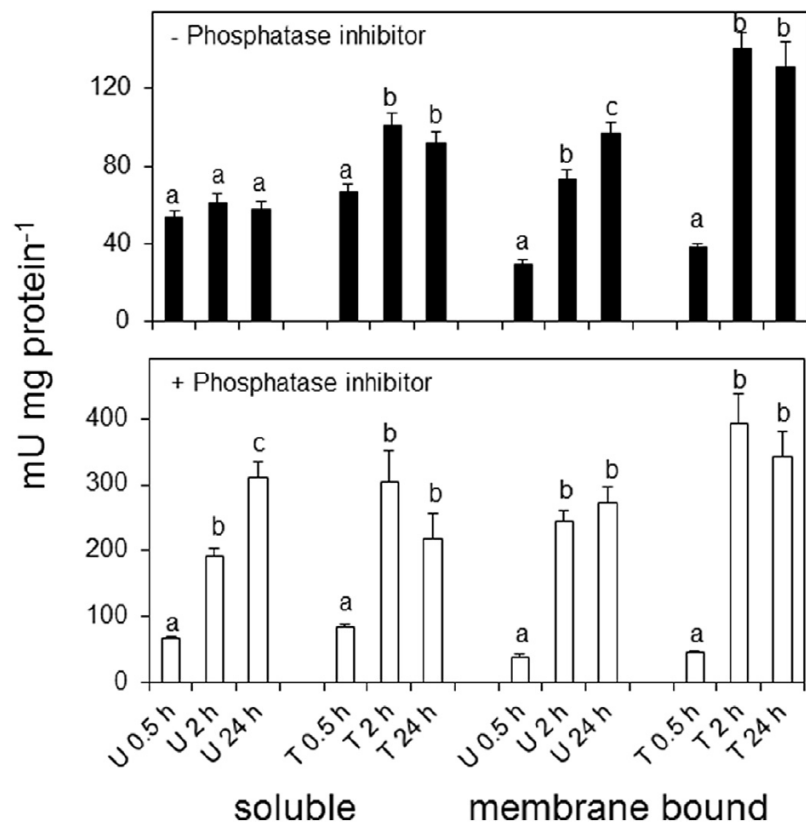
^b Istituto di Biologia Agro-ambientale e Forestale (IBAF), Consiglio Nazionale delle Ricerche, Via Salaria km 29.300, 00016, Monterotondo Scalo (RM), Italy

^c Faculty of Science and Graduate School of Life Science, Hokkaido University, Kita-ku N10-W8, Sapporo, 060-0810, Japan

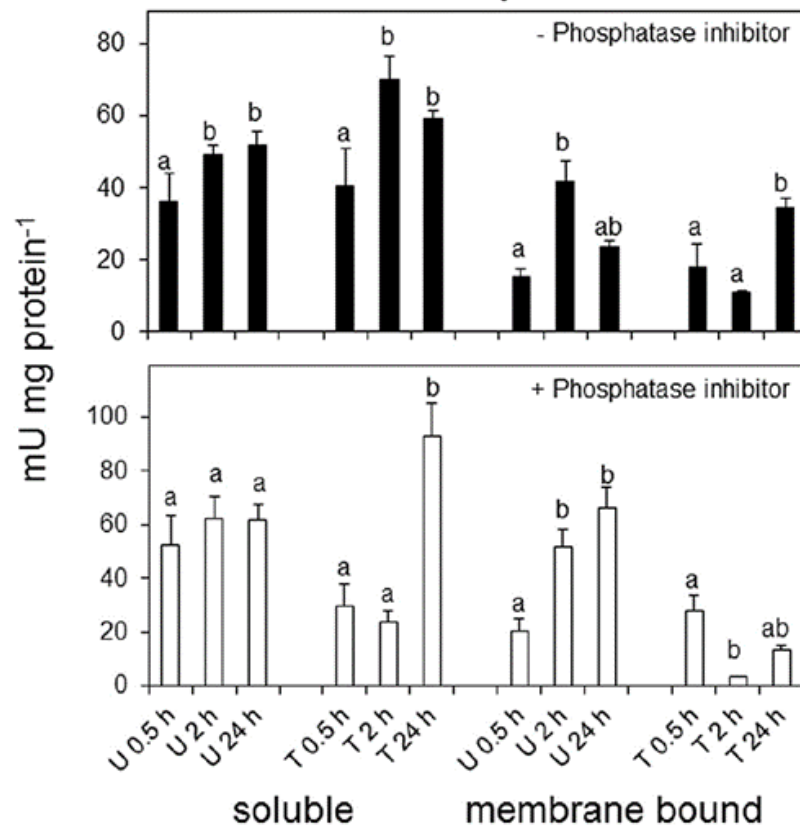




Invertase



Sucrose Synthase



Nitrate Reductase Modulation in Response to Changes in C/N Balance and Nitrogen Source in Arabidopsis

Thais Huaranca Reyes¹, Andrea Scartazza², Antonio Pompeiano³, Andrea Ciurli¹, Yu Lu⁴,
Lorenzo Guglielminetti^{1,*} and Junji Yamaguchi⁴

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³Center for Translational Medicine (CTM), International Clinical Research Center (ICRC), St. Anne's University Hospital, Brno 62500, Czech Republic

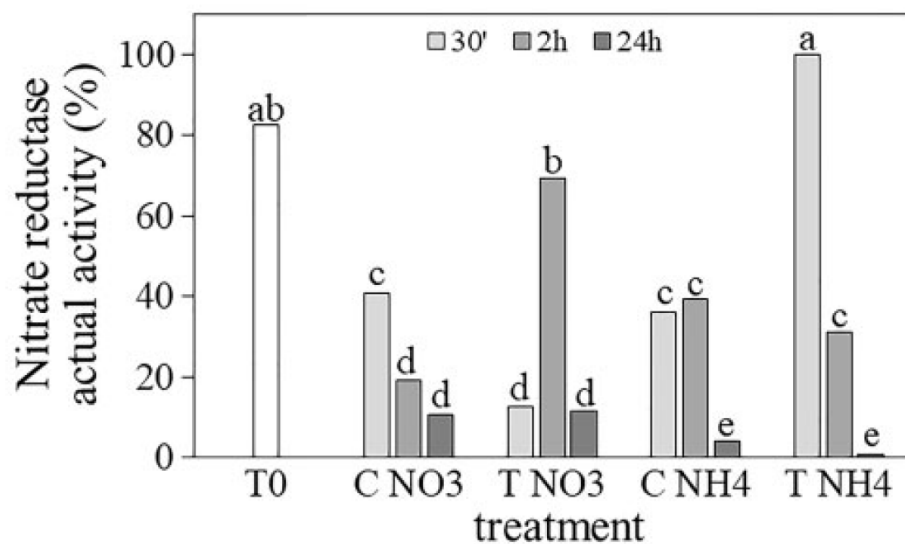
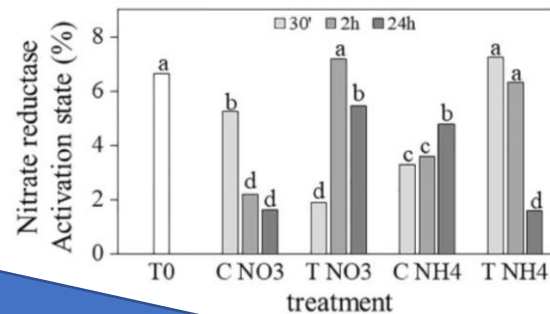
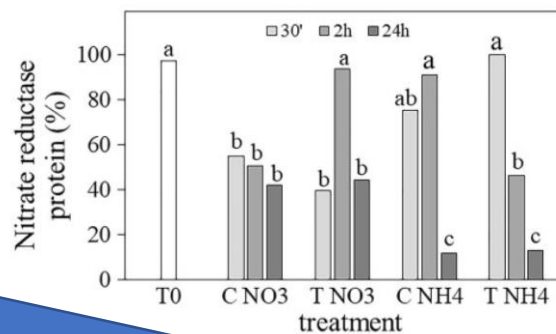
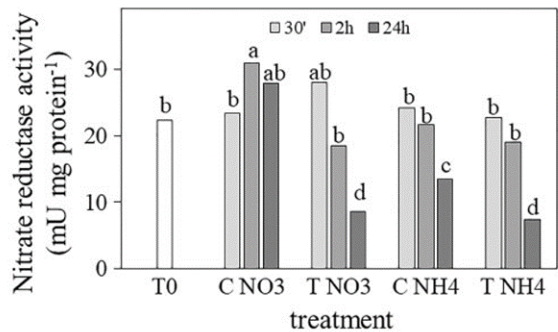
⁴Faculty of Science and Graduate School of Life Science, Hokkaido University Kita-ku N10-W8, Sapporo, 060-0810 Japan

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Regular



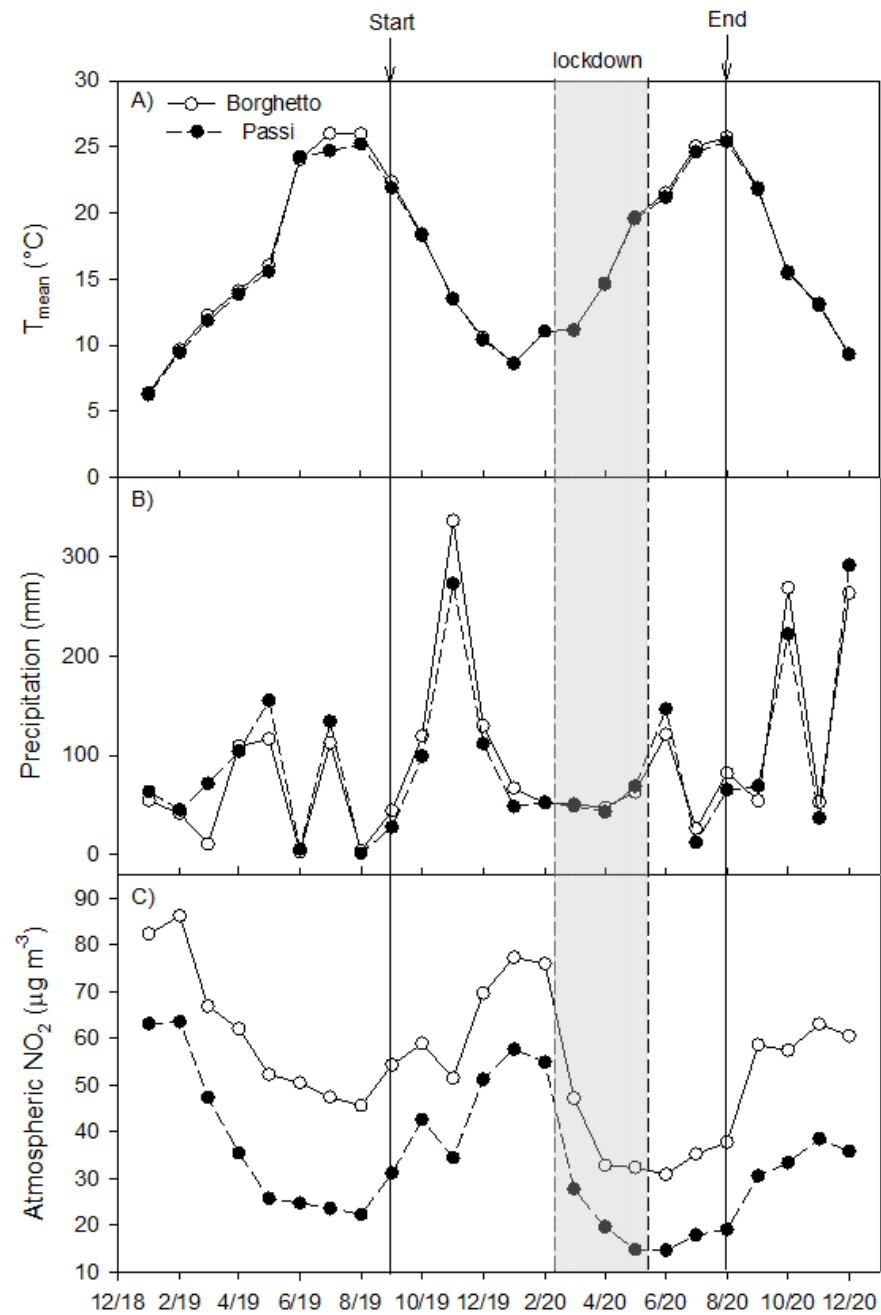


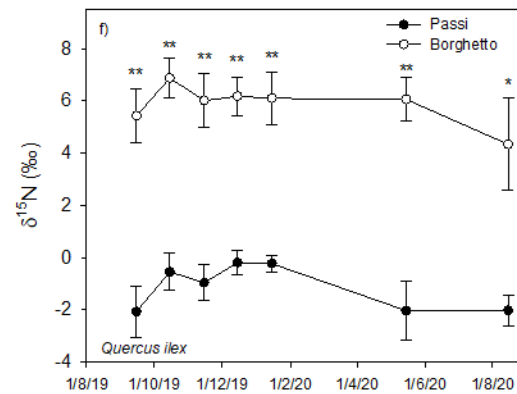
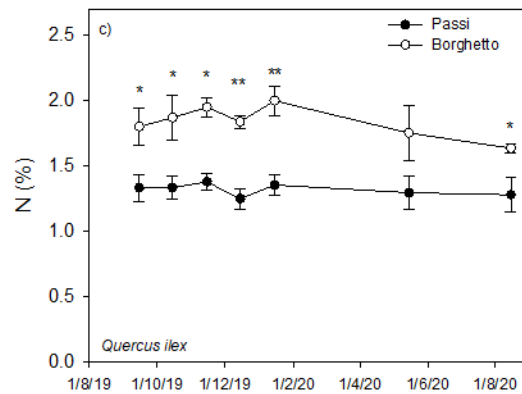
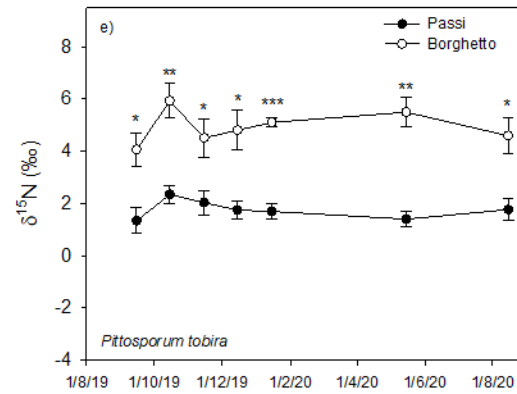
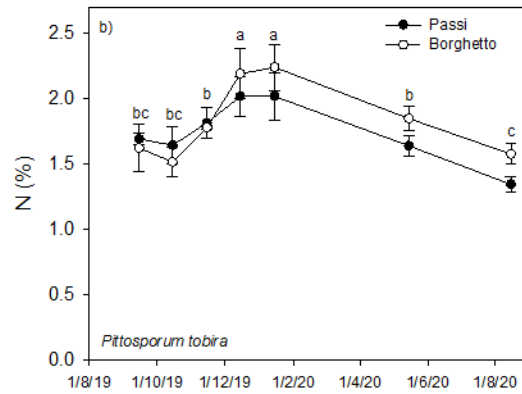
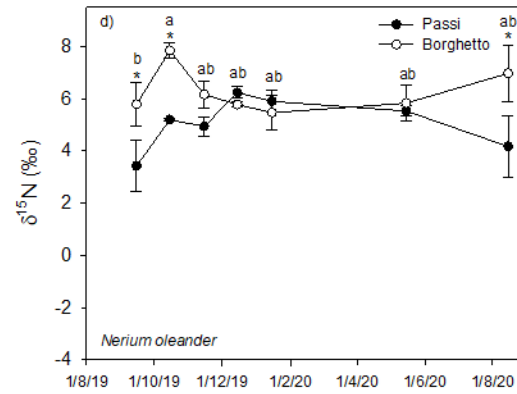
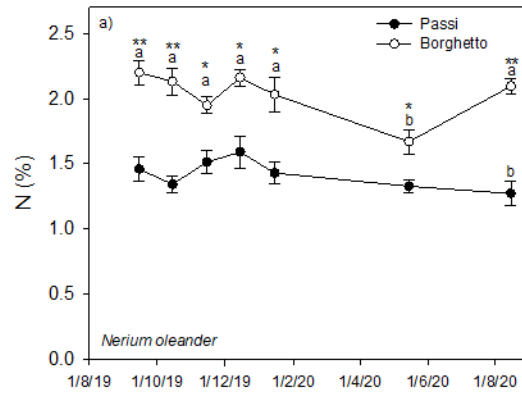
Has COVID19-Lockdown affected C and N concentration and isotope composition in urban soils and plant leaves?

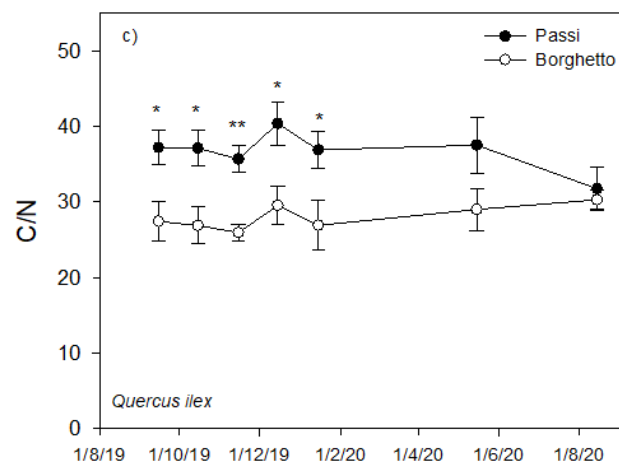
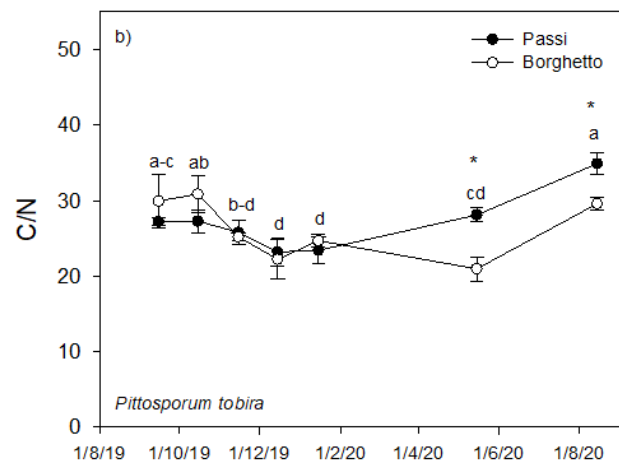
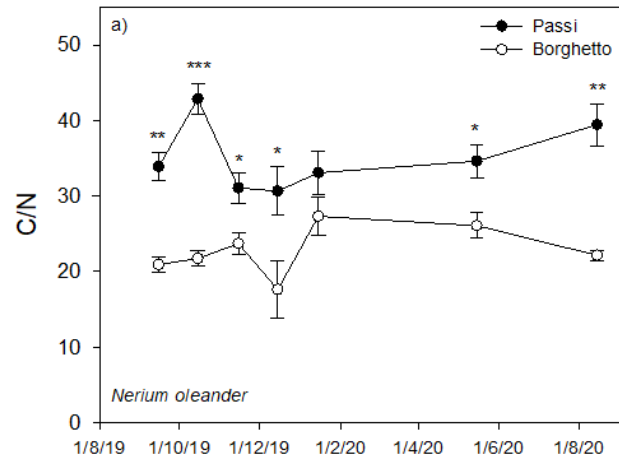
A. Scartazza, T. Huarancca Reyes, F. Bretzel, R. Pini, L. Guglielminetti, C. Calfapietra

Ecosystem, Health and Sustainability, under revision, 2023











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