An Exception to the Rule: Iron-Stressed Maize Produces Phytosiderophore Continuously. (S04-jolley152541-Poster)

Authors:

- V.D.Jolley* - *Brigham Young University*
- M.L.Bernards - *Michigan State University*
- A.K.Shiffler - *Brigham Young University*
- T.F.Stanger - *University of Wisconsin-Madison*
- J.E.Rands - *Brigham Young University*

Abstract:

Most Fe-stressed grasses release phytosiderophores to acquire Fe 4 to 6 h after sunrise. After overcoming initial problems with collection where maize (Zea mays L.) was reported to not release phytosiderophore, release under axenic conditions was reported as continuous during daylight, but was not measured under darkness. The pattern of release from maize roots over 24-h periods (16/8 h light/dark) was measured by collecting in solutions with or without Micropur by using either a new plant or using the same plant for each of six 4-h collection periods. Similar to previous studies when the same plant was used for all six 4-h collections, phytosiderophore release was high in early collections and declined steadily through the sixth collection regardless of time of initiation. In contrast, release was high and constant when measured using a new plant for each 4-h collection over 24 h. The decline in release when using the same plant could be due to microbial decay of phytosiderophore, Micropur damage of roots or to phytosiderophore-mediated acquisition of Fe from the apoplast. We have evidence supporting the latter.

Corresponding Author Information:

Von Jolley
Brigham Young University
275 WIDB
Provo, UT 84602

phone: 801 422-2491
fax: 801 378-2203
e-mail: von_jolley@byu.edu

Presentation Information:

Presentation Date: Monday, November 11, 2002

Presentation Time: 9:00-11:00 am
Poster Board Number: 1426

Keywords:
iron deficiency, diurnal response, maize, phytosiderphore