

Suspended Solids in and Turbidity of Runoff from Green Roofs

Susan Morgan, Ph.D., P.E.

SIUE Department of Civil Engineering

Isam Alyaseri

SIUE Department of Civil Engineering

William Retzlaff, Ph.D.

SIUE Department of Biological Sciences

6th International Phytotechnologies Conference

December 3, 2009

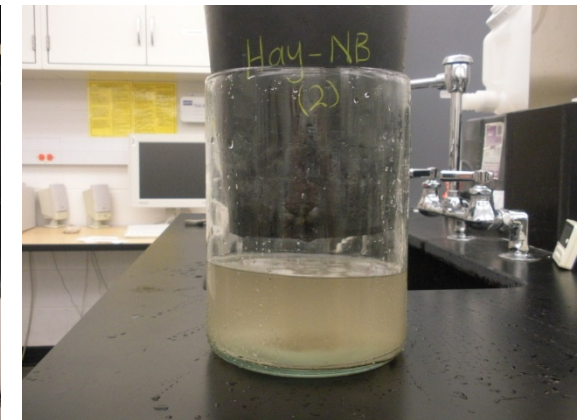
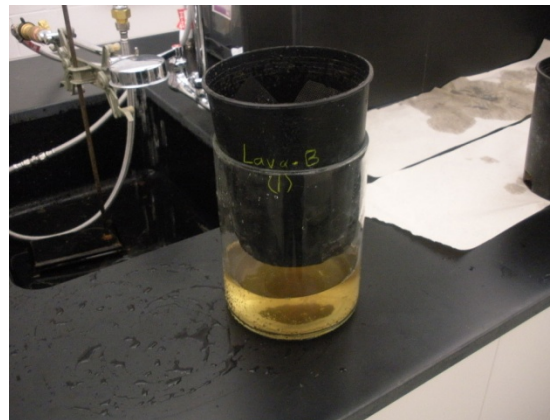


Outline

- Introduction – Why?
- Materials and Methods – How?
- Results – What?
- Summary – What now?

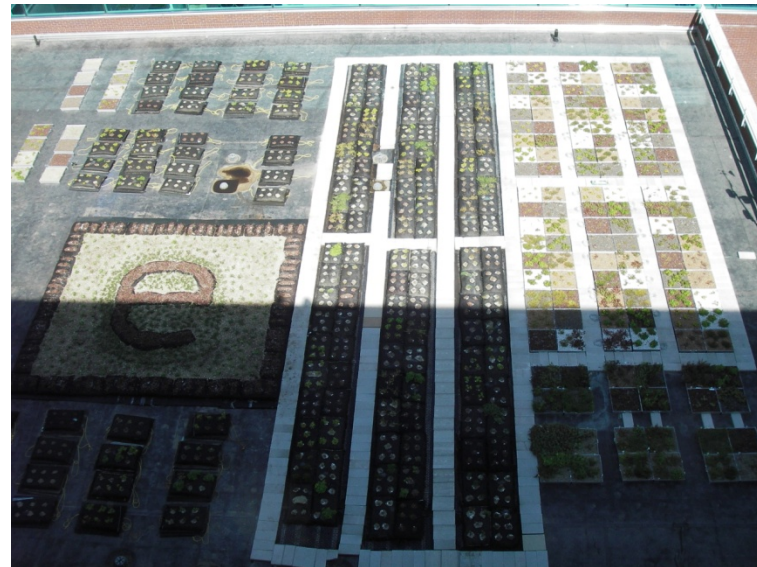


Introduction



Materials and Methods

- Growing media
- Water
- Vegetation
- Light

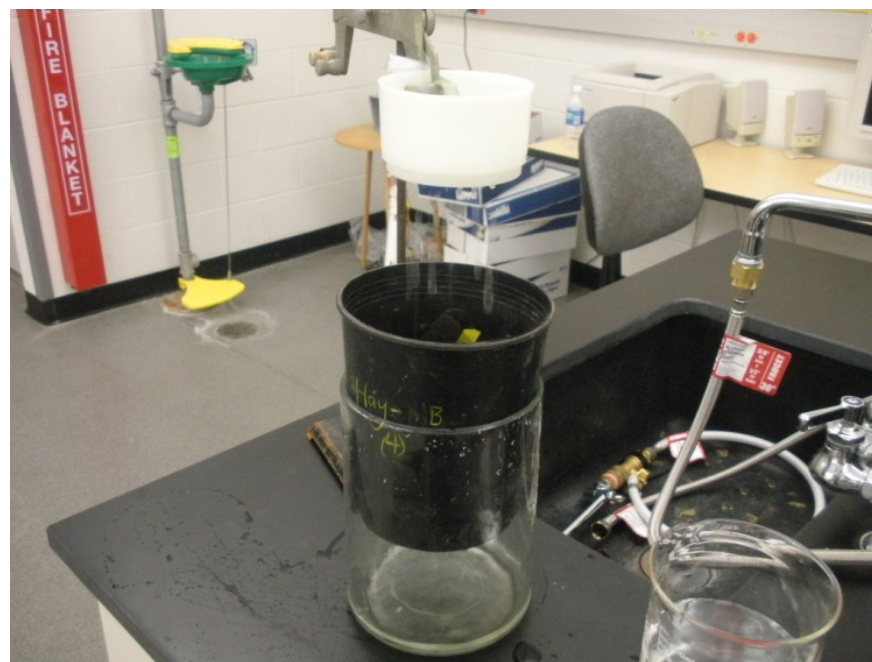


Growing Media

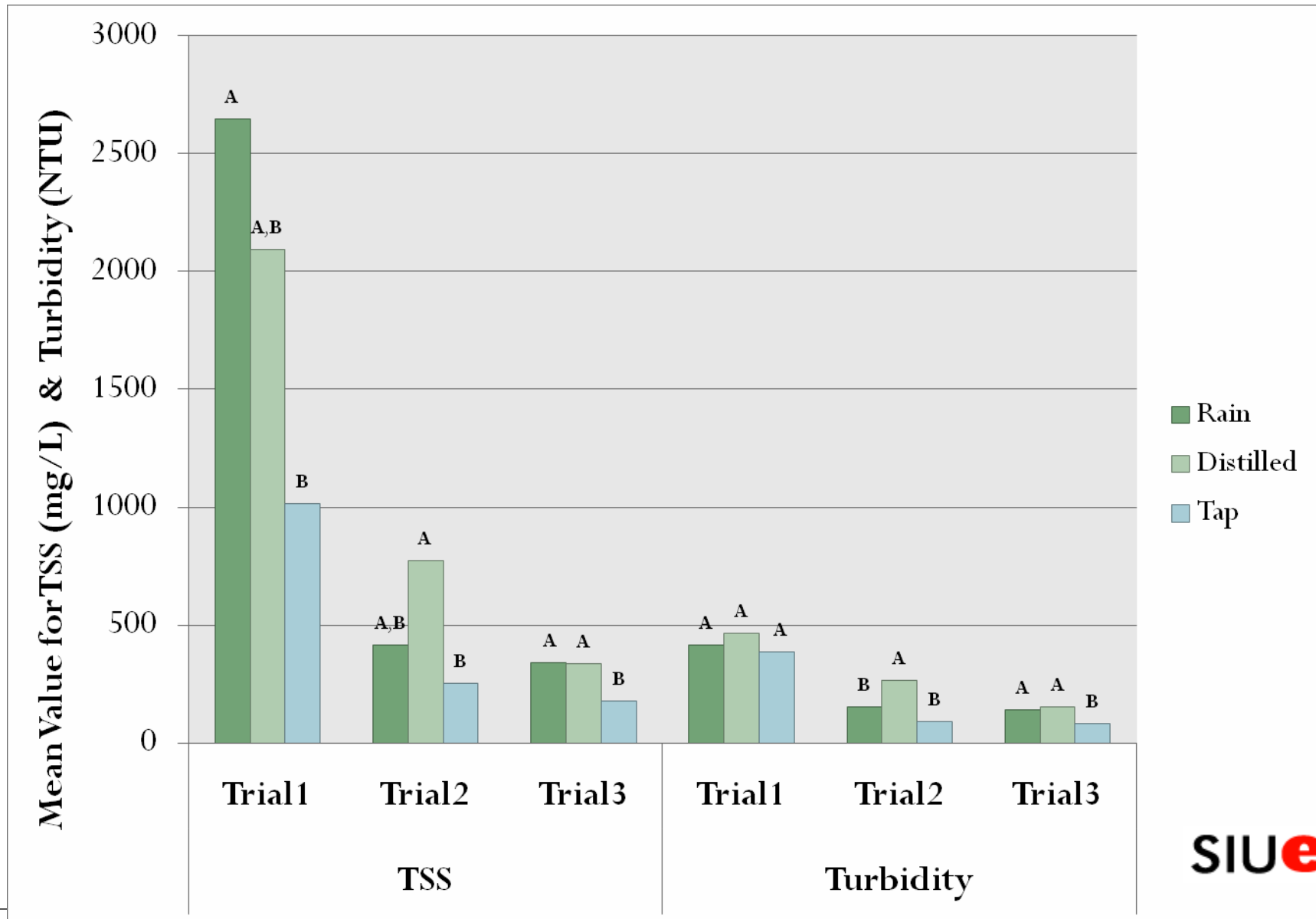
Media	Description
Arkalyte	Clay heated to 1000 °C
Bottom ash	Ash from coal power plant
Haydite	Shale heated to 1000 °C
Lava	Volcanic rock



Water



Initial Results – Water Source



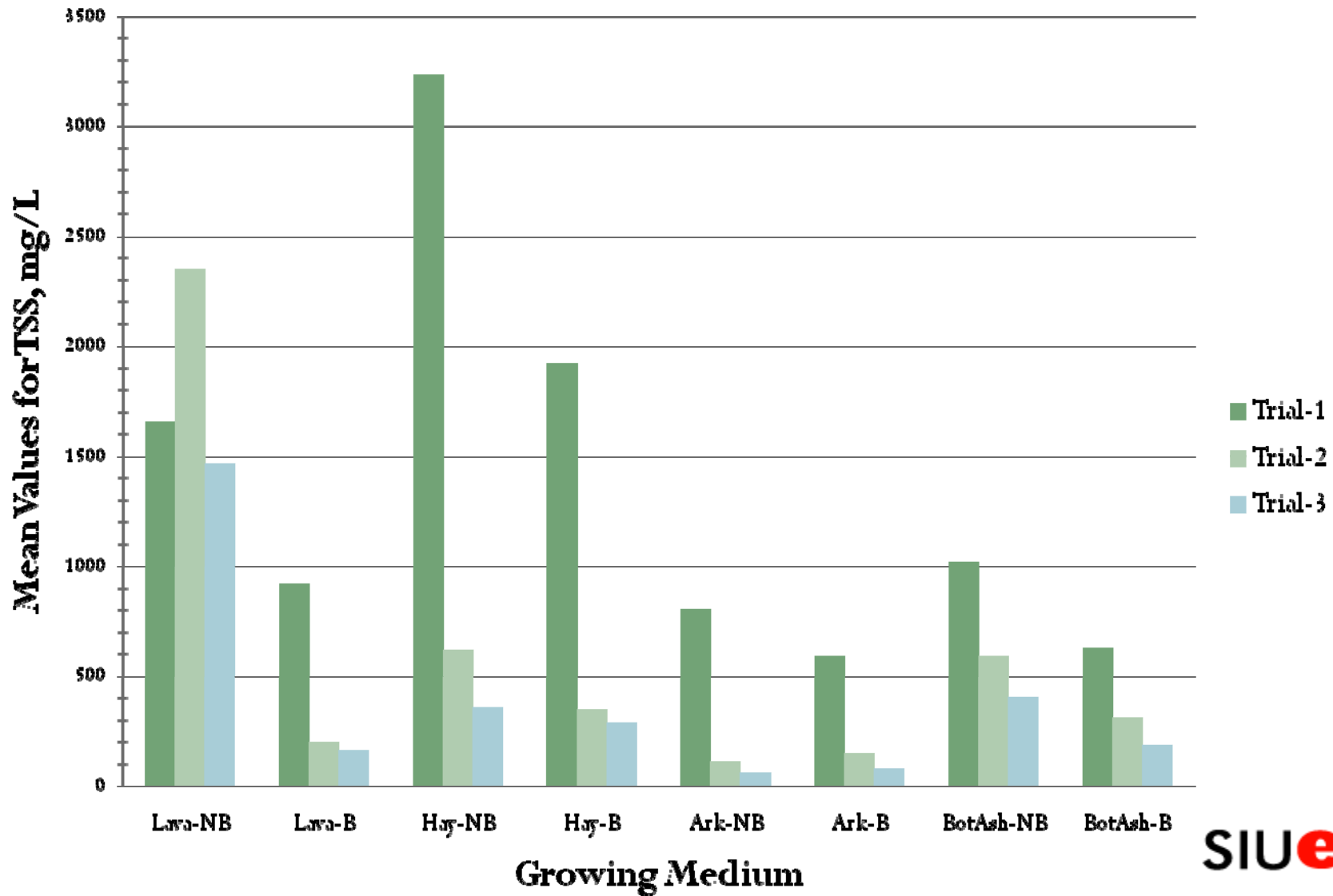
Vegetation



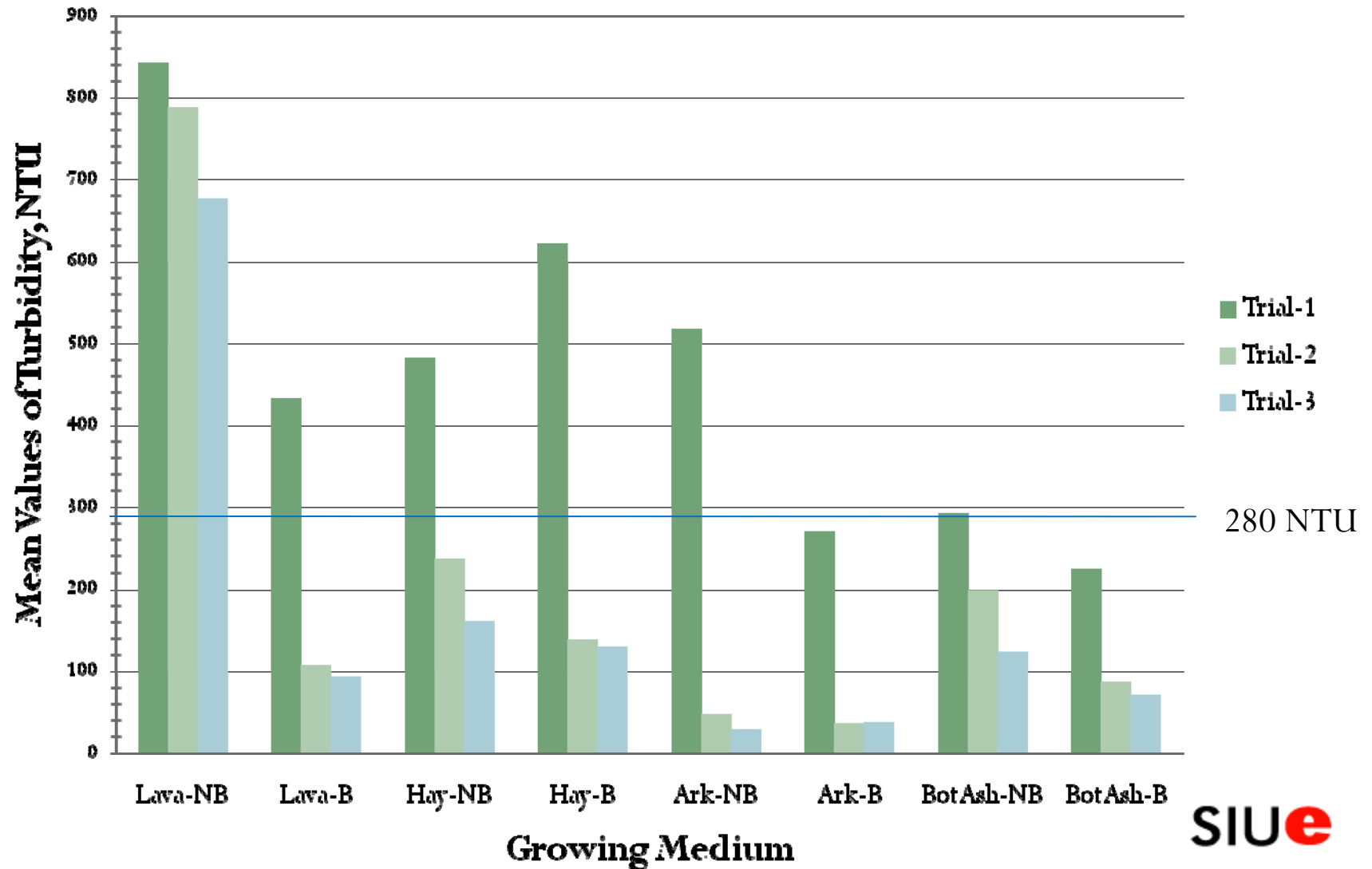
Light



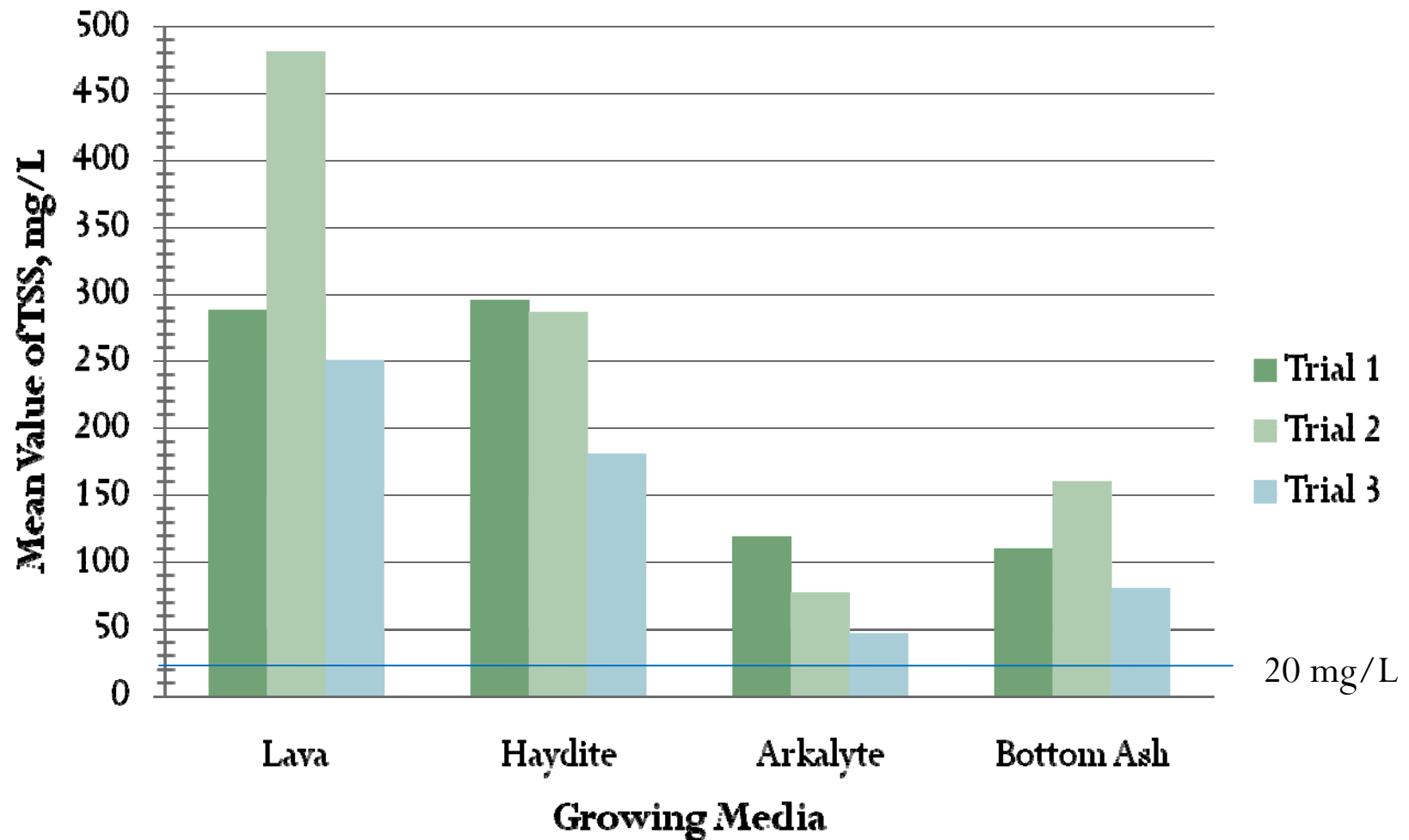
Initial Results - Growing Media TSS



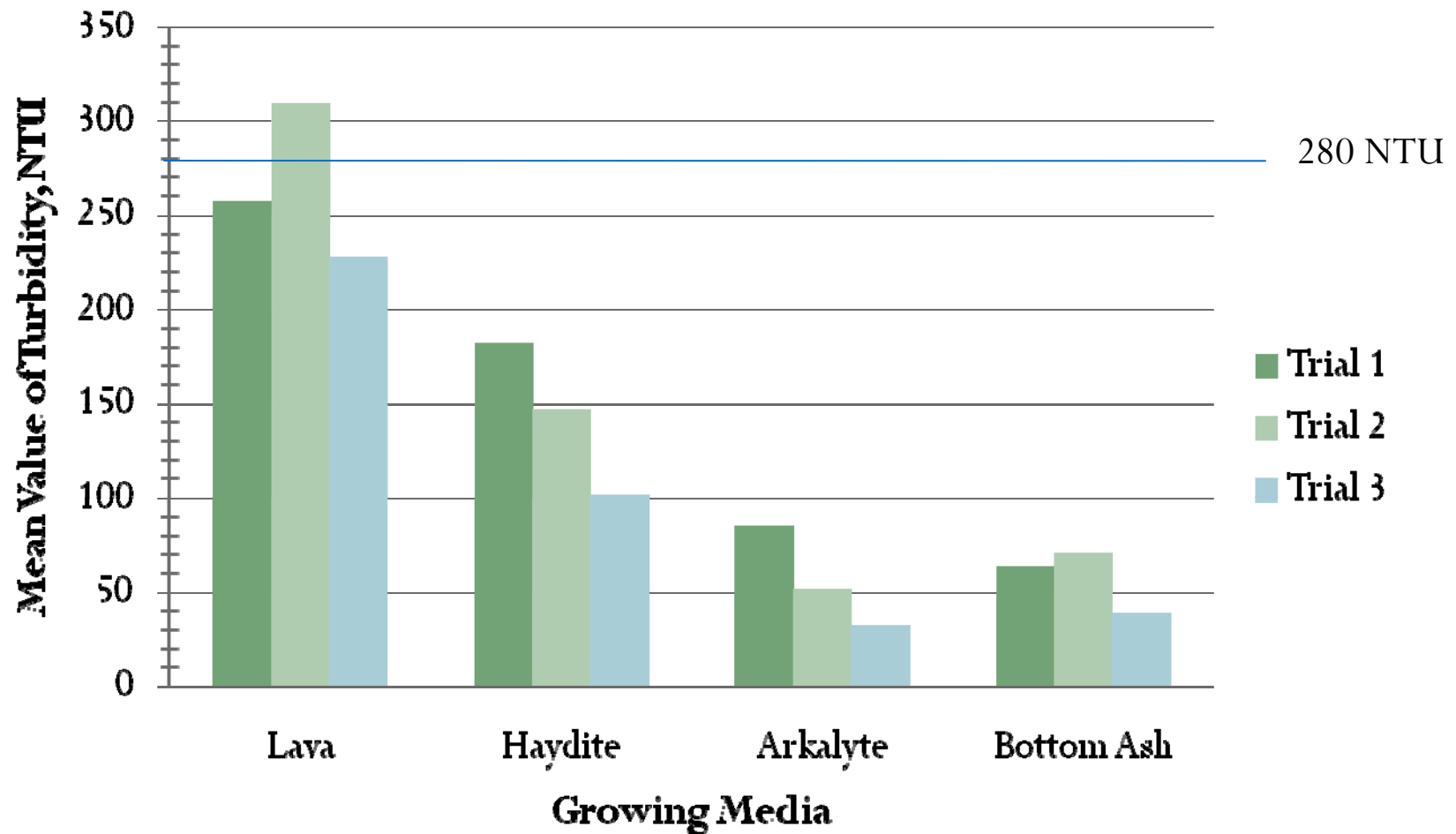
Initial Results – Growing Media Turbidity



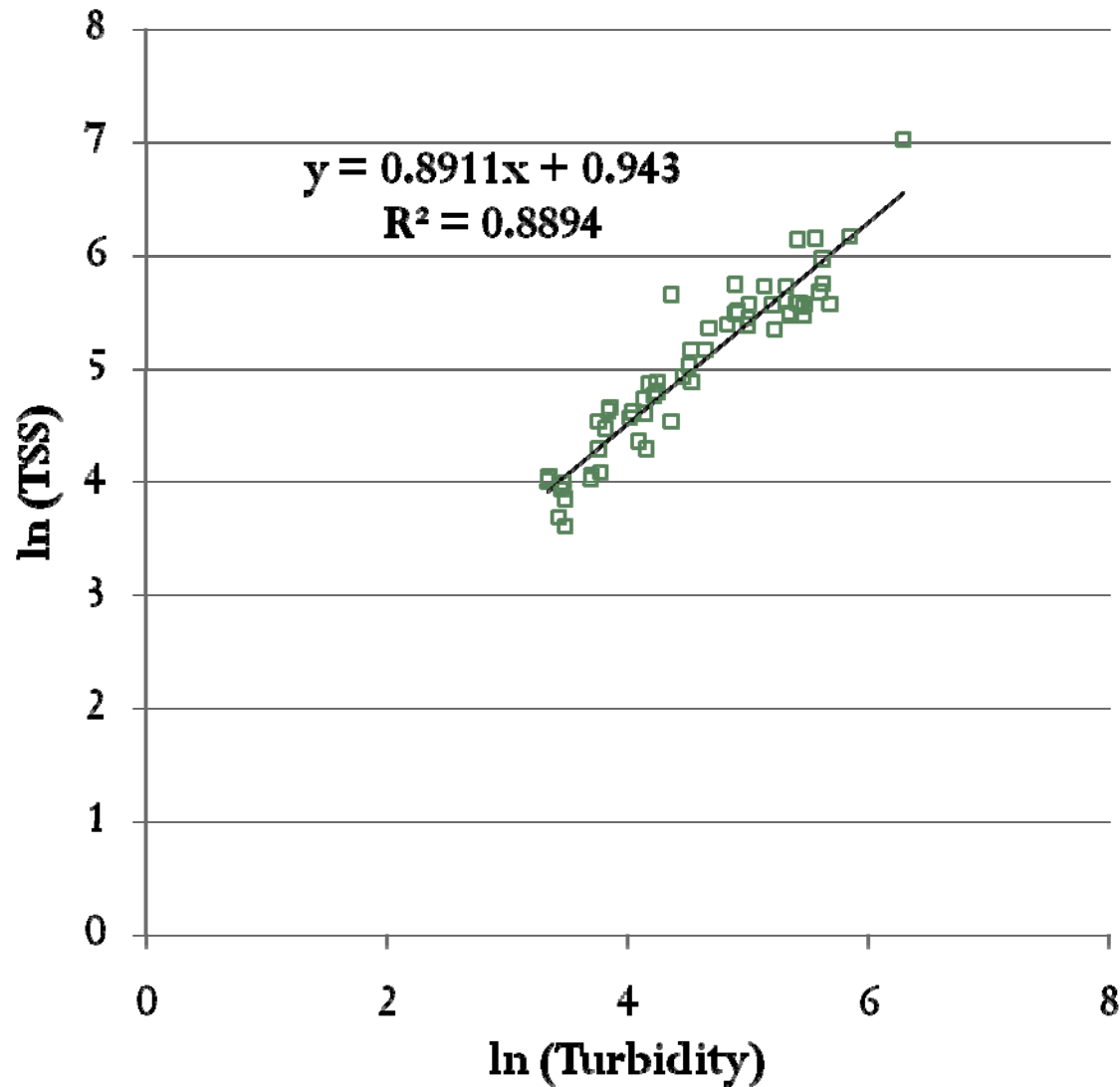
Initial Results – Vegetated Media TSS



Initial Results – Vegetated Media Turbidity



Initial Results – Turbidity vs. TSS



Initial Results – Effects of Color

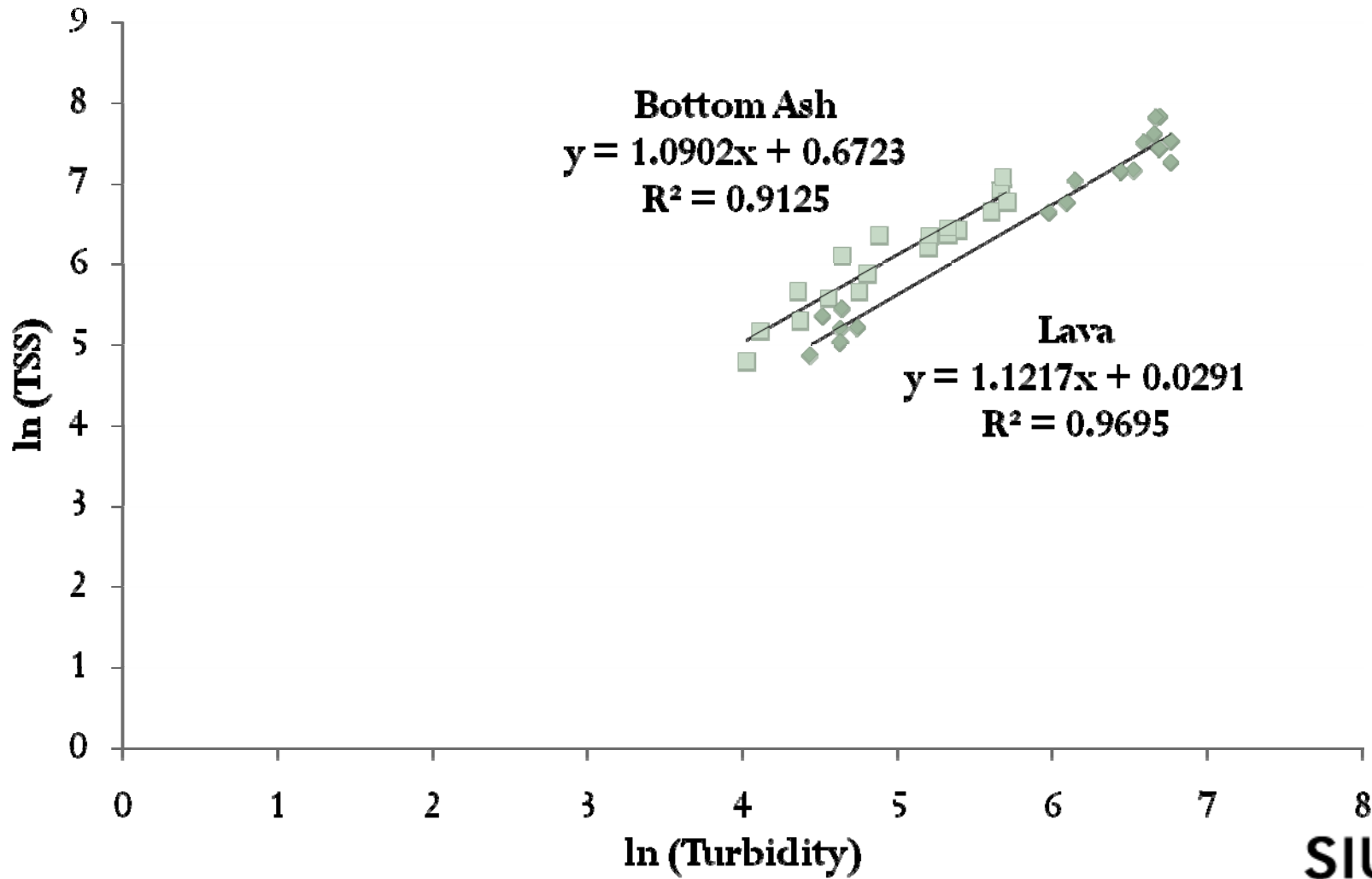
Bottom Ash Non-blended



Lava Non-blended



Initial Results – Effects of Color



Summary

- TSS and turbidity of the growing media decrease over time
- TSS and turbidity vary between media
- The relationship between TSS and turbidity varies with the media and composition of growing medium

Questions?



www.green-siue.com