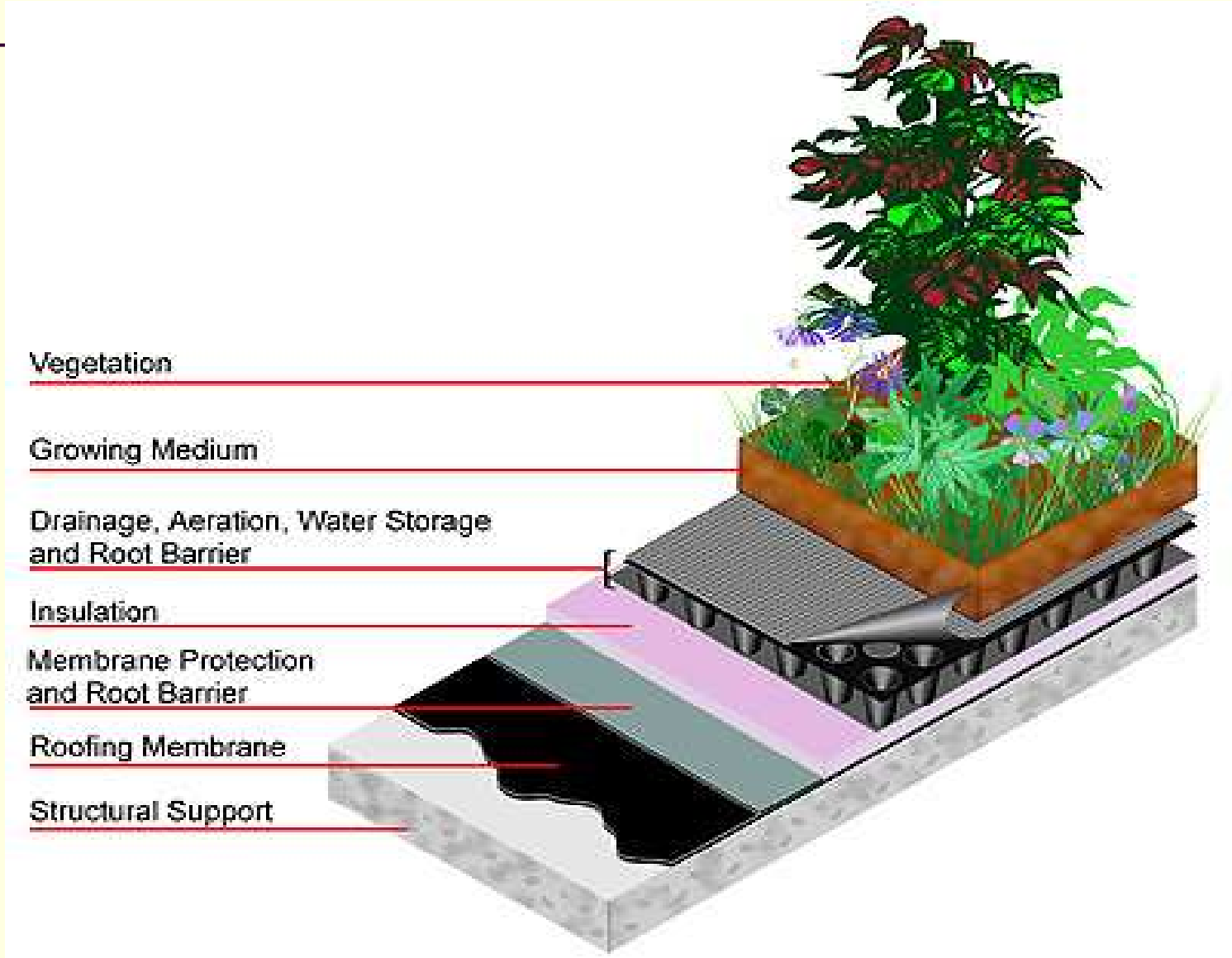
Typical Green Roof Design



Wind Engineering

Wind Engineering

Growth Media

Media	Description
Arkalyte	Clay heated to 1000 ^{0}C
Bottom ash	Ash from coal power plant
Haydite	Shale heated to 1000 ^{0}C
Lava	Volcanic rock

Rooflite (Stalite), Midwest Mix, Glass, Pumice

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11/19/2009


11/19/2009

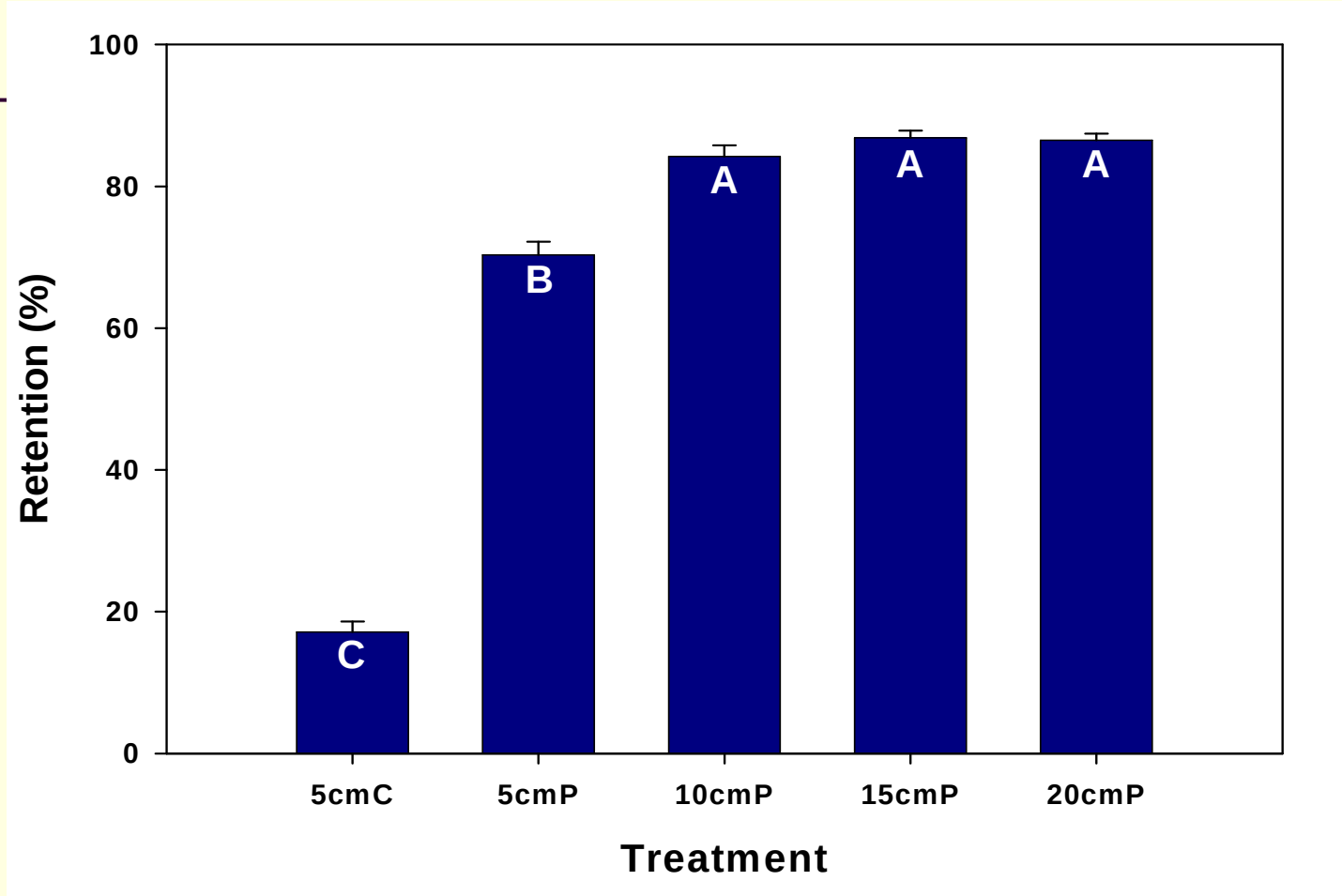

11/19/2009


11/19/2009

SIUE Field Site

SIUE Field Site

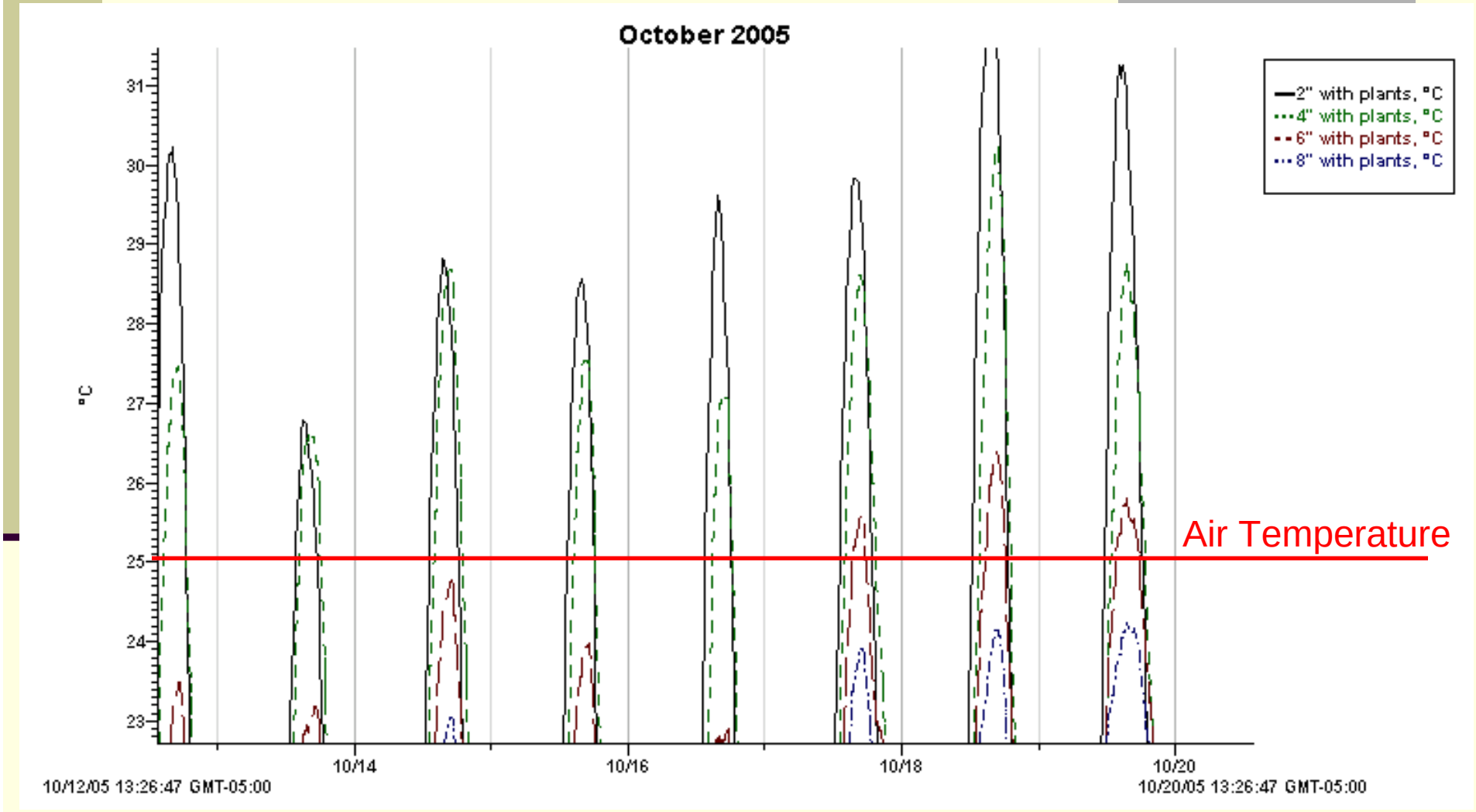
Stormwater Results – Retention



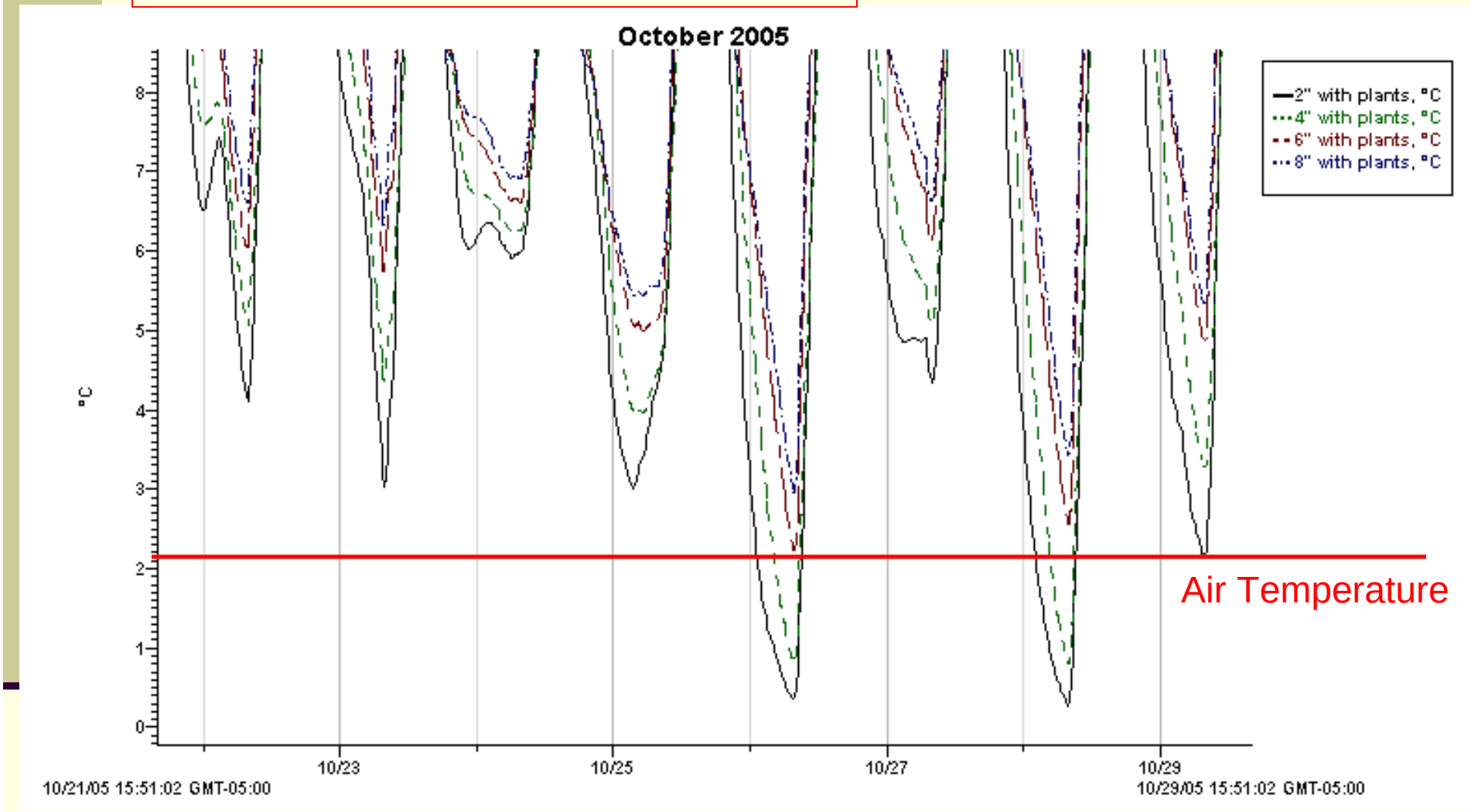
Mean storm water retention (%) for study period 04/07-11/07 for green roof systems with 5, 10, 15, and 20 cm planted medium depths. (C=Control, P=Planted. Bars with same letter not significantly different at the p<0.05 level. Error bars + 1se).

Project #1 – Thermal Benefits

Control Membrane Temperature (40 °C)



Project #1 – Thermal Benefits



Control Membrane Temperature (-4 °C)

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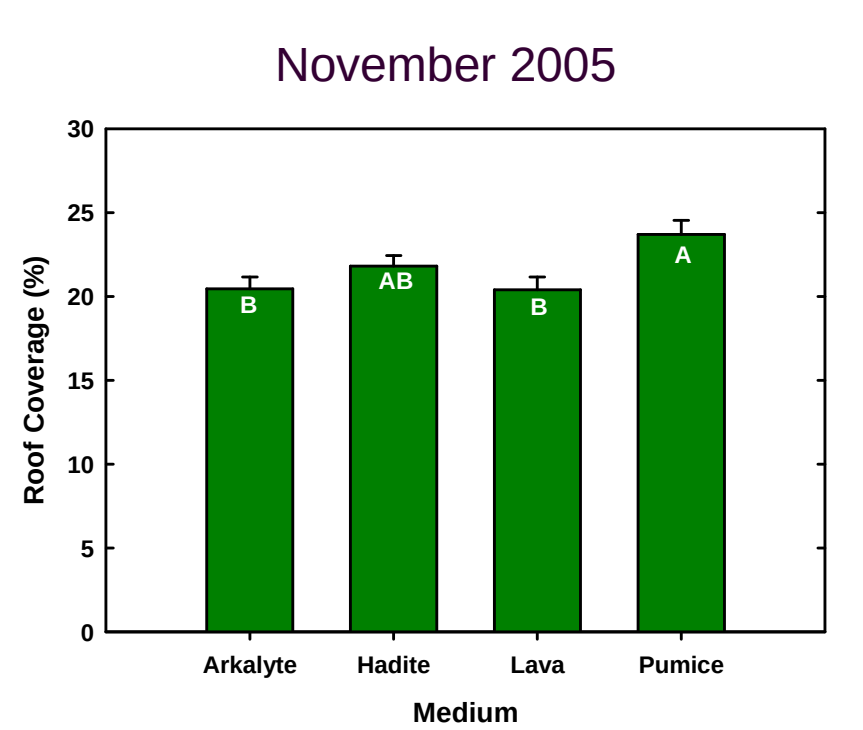
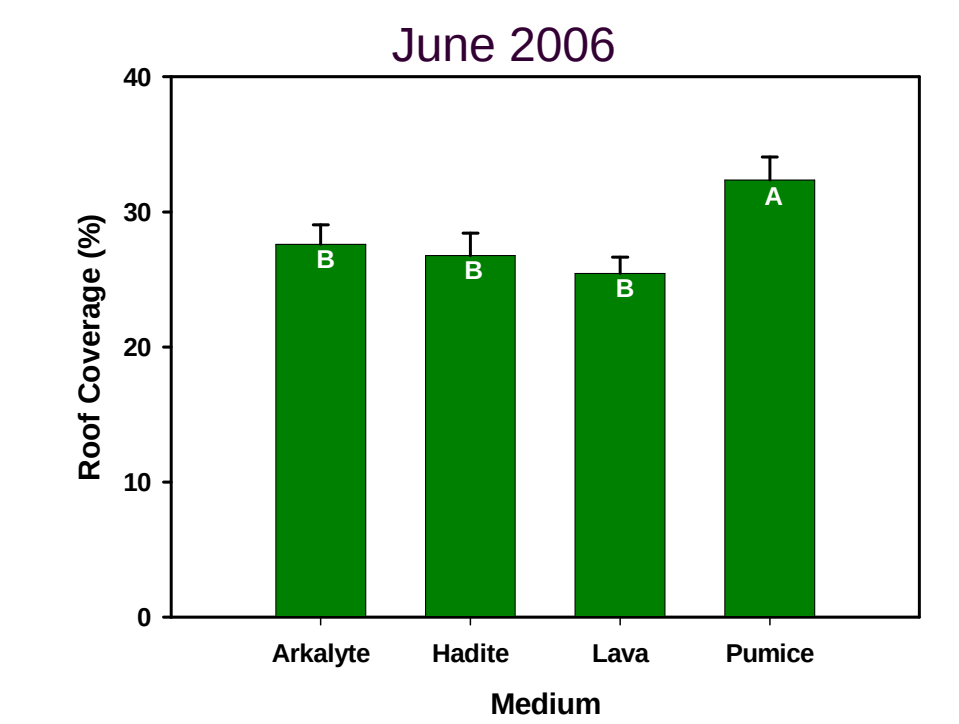
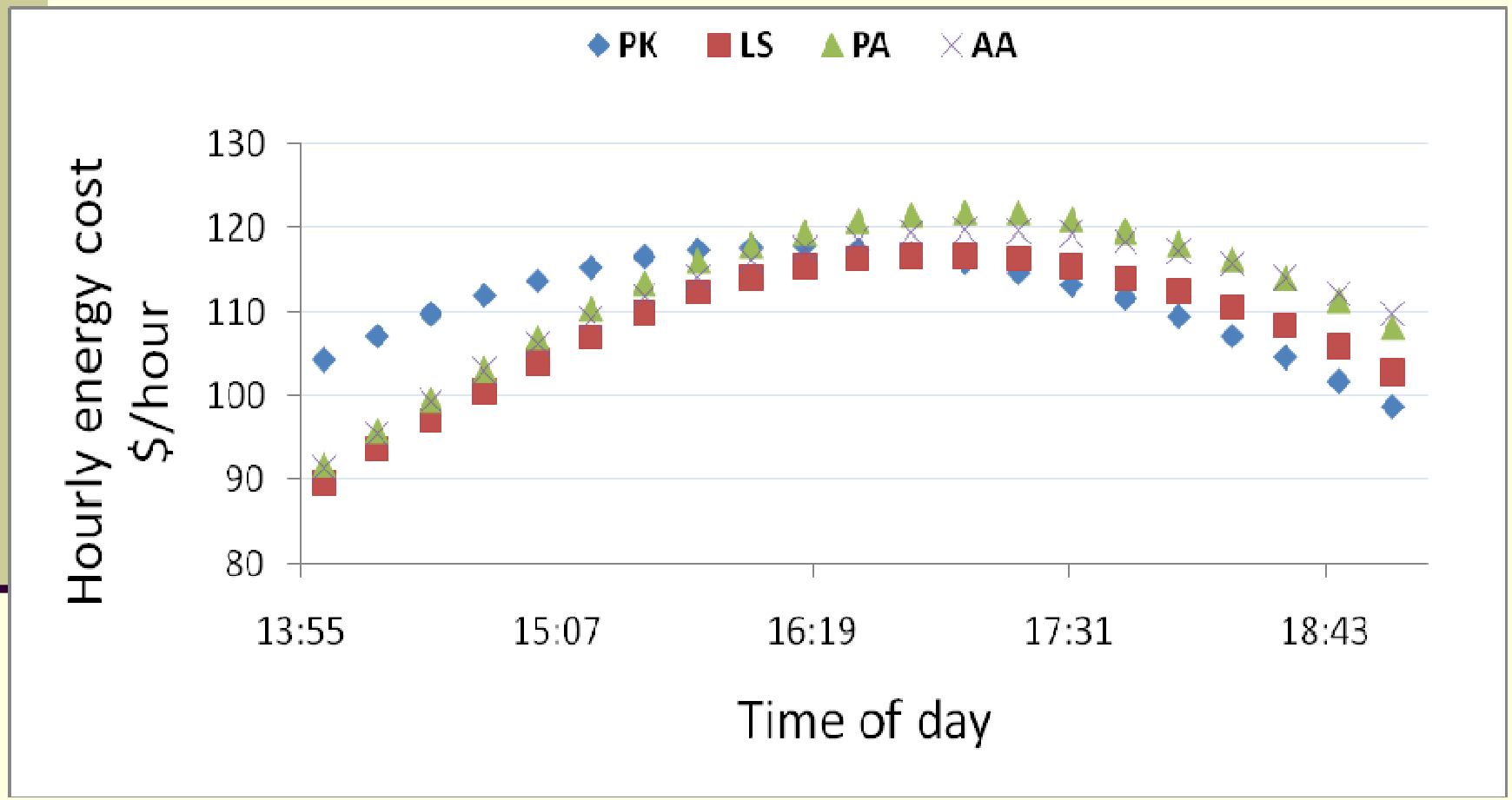
Growing Medium

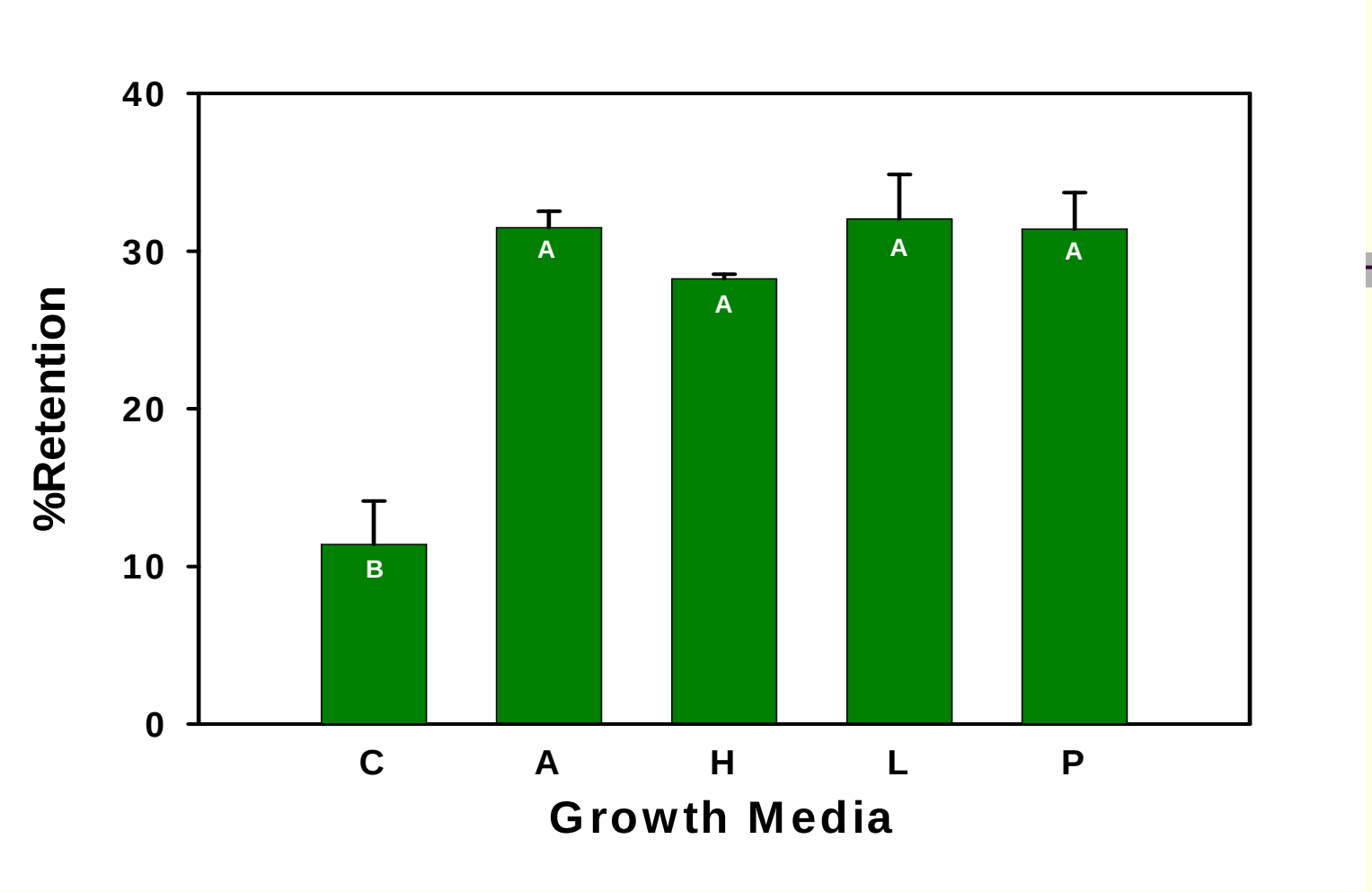




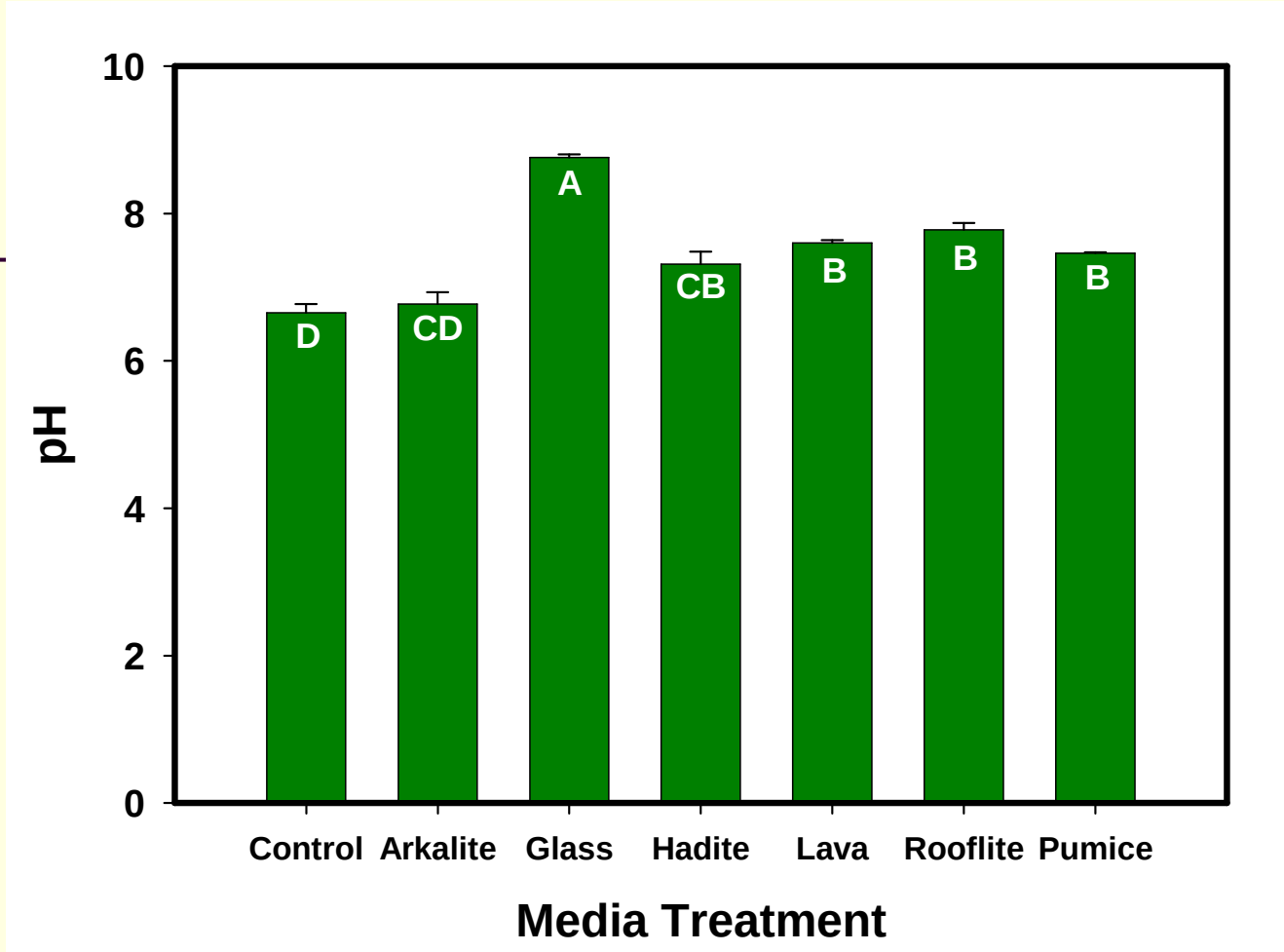
Treatments with the same grouping letter are NOT statistically different, α=0.05

Energy Cost of a 50,000 m^2 Roof during Peak Hours



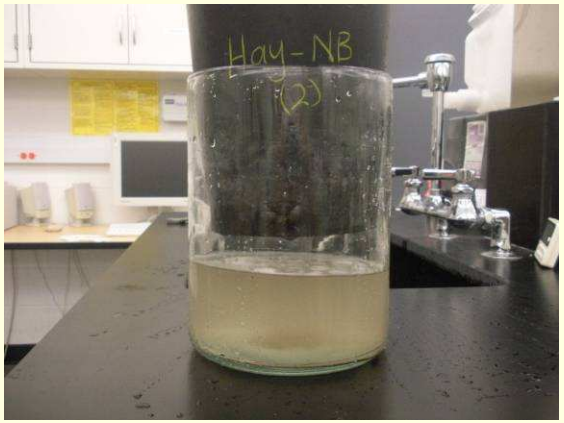


Storm water retention (%) of four planted growth mediums and control roofs for 24 weeks beginning August 8, 2006. Bars with different letters are significantly different (α<0.05). Error bars represent +1se. (n=3)



Mean pH levels for July 2, 2007 of 6 different media in planted 10 cm Green Roof Blocks™. Bars with same letter are not significantly different, $p<0.05$. Error bars + 1 SE.

Results: Runoff Quality – Solids



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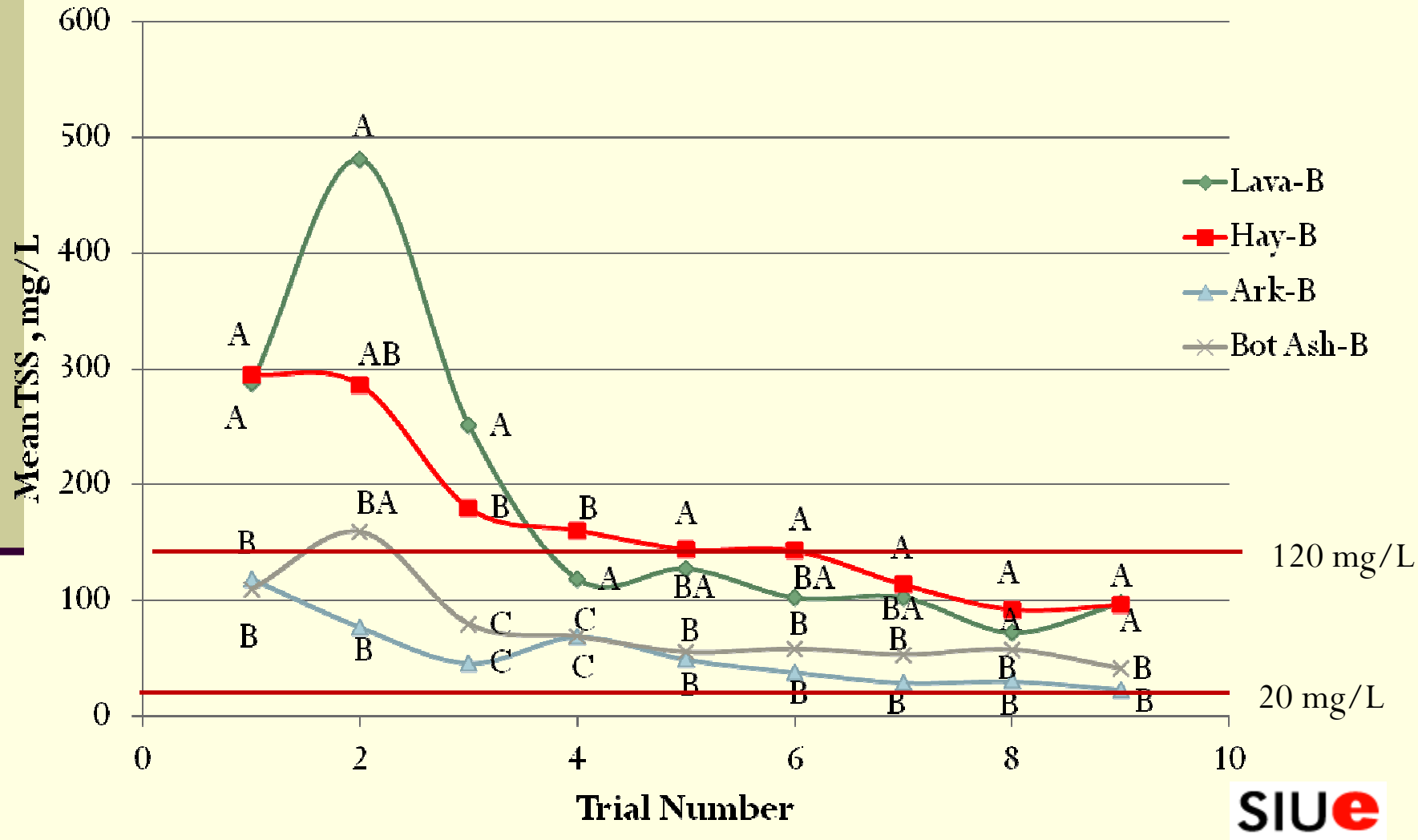
Vegetation

Vegetated Media TSS



SIUE Student Success Center

Sloped Roofs

Sloped Roofs

Vegetated Walls

G.R.E.E.N. Research Goals

- Green Roof Prescriptions
- New Technologies
- Evaluate Problems
- Research Information Portal
- Energy Conservation
- Recyclable Materials

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