Testing Polyacrylamides For Turbidity and Erosion Control. (S06-mclaughlin090133-Oral)

Authors:

- R.A.McLaughlin - *Soil Science, North Carolina State Univ.*
- S.A.Hayes - *Soil Science, North Carolina State Univ.*
- N.Bartholomew - *Soil Science, North Carolina State Univ.*
- D.L.Osmond - *Soil Science, North Carolina State Univ.*

Abstract:

One of the more promising and practical approaches to reducing erosion and turbidity at construction sites is the use of anionic polyacrylamide (PAM). Several of the 13 PAMs tested were effective on many of the sediments tested, although no PAM consistently performed better than others for all sediments. Overall, PAM doses of 0.1 to 2 mg/L can reduce turbidity by 95% or more in 30 s laboratory tests. Field tests involved water flowing under gravity in a 30 cm pipe at variable rates of 850 to 2500 L/min with soil added approximately 10 m above the discharge point. PAM blocks were placed inside the pipe below the point where the soil was added. Turbidities within the basins ranged up to 5,000 nephelometric turbidity units (NTU) during the peak of the events, and dropped to 200 to 400 NTU toward the end of the discharge period. Adding PAM to the system dropped the turbidity in the discharge below 100 NTU. PAM did appear to reduce erosion rates on slopes of 20% or less, but the effect was reduced after several rainfall events. PAM was not effective on steeper slopes. However, straw mulch and seeding alone was always highly effective in reducing erosion by up to 95% or more.

Corresponding Author Information:

Richard McLaughlin
North Carolina State University
Box 7619
Raleigh, NC 27695

phone: 919-515-7306
fax: 919-515-7494
e-mail: rich_mclaughlin@ncsu.edu

Presentation Information:

Presentation Date: Monday, November 11, 2002
Presentation Time: 10:40 am

Keywords:

polyacrylamide, turbidity, erosion, mulch