Compaction Mitigation

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Active Construction samples

Pre-construction sample
Plot Treatments

- Control – plot only seeded and mulched.
- Deep till – plot deep tilled 3 feet deep, 5 foot spacing.
- Chisel plow – plot deep tilled and chisel plowed 12 inches deep.
- Compost – plot deep tilled, chisel plowed, and 3 inches of compost amended to topsoil.
2.4 x 3.7 meter plots on uniform 10% slope

upslope diversion

dumping bucket runoff gauge
Simulated Rainfall Event

- 2.2 inches of precipitation
- 30 minute duration
- 46 Days after seeding (July 26
- Applied by sprinkler
Average Percent Runoff

![Bar graph showing average percent runoff for different treatments. The treatments are Control, Deep Till, Chisel Plow, and Compost. The Control has the highest runoff at 7%, followed by Deep Till at 3%, Chisel Plow at 2%, and Compost with no runoff.]
Percent Reduction in Runoff

- Deep Till: 55%
- Chisel Plow Treatment: 71%
- Compost: 98%
Runoff Results from Natural Precipitation

16 storm events that produced runoff.
Cumulative Runoff

- Control: +19%
- Deep Till: -39%
- Chisel Plow, Deep Till: -88%
- Compost, Chisel Plow, Deep Till: -88%
Rainfall Versus Runoff

- Control
- Deep Till
- Deep Till and Chisel Plow
- Deep Till, Chisel Plow, and Compost
Small Storm Cumulative Runoff

Control
Deep Till
Chisel Plow, Deep Till
Compost, Chisel Plow, Deep Till

Runoff (Liters)

Treatment

+64%
-53%
-74%
Large Storm Cumulative Runoff

Control: 0%
Deep Till: +11%
Chisel Plow, Deep Till: -36%
Compost, Chisel Plow, Deep Till: -91%
No Treatment

Deep Tilled

Chisel Plowed

Compost

6-18-02, 8 Days
Summary of Research

- Results are showing benefits of deep tilling and chisel plowing and deep tilling, chisel plowing, compost amendment.

- Deep tilling alone produced more runoff. This may be due to ripper configuration or soil conditions.
Use Certified Compost

- Ensures weed seeds are killed.
- Prevents the spread of diseases, including Oak Wilt.
- WDNR Specification S100
Questions?