**Problem**

Droughts are increasing due to climate change in western Nevada, lowering crop yields.

**Background**

- Nevada soil types: clay loam and silt clay loam
- Poor water flow
- Clay content is too high
- Heavy irrigation is necessary

**Solution**

- Collect manure from CAPOS in California
  - 76 metric tons/hectare
- Manure Transport and Matching Service
- Use direct injection to incorporate manure into clay loam and silt clay loam soil

**What is Direct Injection?**

Direct injection is a method to incorporate manure into crop soil by feeding it into the soil instead of spreading it on top of the soil.

**Hydraulic Conductivity of Soil**

This graph shows that the addition of farmyard manure (FYM) to silt clay loam increases hydraulic conductivity.

**ADVANTAGES**

- Optimize soil composition
- Eliminates waste from farms
- Allows water to flow easier within soil
- Increases crop yields

**DISADVANTAGES**

- Difficult to gather waste on farms
- Direct injection machine costs $9,000-$60,000
- Process needs to be repeated for results
- Transporting manure has a high cost

**Assessment**

1. Measure Clay Percentage
2. Test Water Flow
3. Measure Crop Yields

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**References**


SOIL TURMOIL

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