Problem

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

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.

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

Advantages

<table>
<thead>
<tr>
<th>ADVANTAGES</th>
<th>DISADVANTAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimize soil</td>
<td>Difficult to gather</td>
</tr>
<tr>
<td>composition</td>
<td>waste on farms</td>
</tr>
<tr>
<td>Eliminates waste</td>
<td>Direct injection</td>
</tr>
<tr>
<td>from farms</td>
<td>machine costs $9,000-$60,000</td>
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<tr>
<td>Allows water to</td>
<td>Process needs to be</td>
</tr>
<tr>
<td>flow easier within</td>
<td>repeated for results</td>
</tr>
<tr>
<td>soil</td>
<td></td>
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<tr>
<td>Increases crop</td>
<td>Transporting manure</td>
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<tr>
<td>yields</td>
<td>has a high cost</td>
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Assessment

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

Acknowledgments

We would like to thank Dr. Paul Verburg of the University of Nevada at Reno for his advice and support!

References