VeggieClean
VeggieClean

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Nuestras Raices
# VeggieClean

## Customer Contract

<table>
<thead>
<tr>
<th>Customer Need</th>
<th>Product Attribute</th>
<th>Engineering Spec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can handle crop yield</td>
<td>Vegetable throughput</td>
<td>&gt; 100 ft³/hour</td>
</tr>
<tr>
<td>Extra help not necessary</td>
<td>Operability</td>
<td>1 user</td>
</tr>
<tr>
<td>Used water can be dumped at no cost</td>
<td>Daily water use</td>
<td>&lt; 500 gal</td>
</tr>
<tr>
<td>No need for large capital investment</td>
<td>Price</td>
<td>&lt; $4000</td>
</tr>
</tbody>
</table>
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Key Risks

- Poorly washed vegetables
- Damaged vegetables
- Low throughput
- Non-uniform vegetable flow
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Concepts: Sprayer

Time to Wash a Vegetable Under Variable Conditions

Nozzle Type and Water Pressure

GPM: gallons/min at 40 psi
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Concepts: Agitator
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Concepts: Rotating Drum

![Rotating Drum Diagram]

Travel Time vs. Rotation Speed for 4.5 Degree Incline

- **Time (seconds)**:
  - 50: 9 seconds
  - 74: 7 seconds
  - 90: 5 seconds

- **Rotation Speed (rpm)**:
  - 50 rpm
  - 74 rpm
  - 90 rpm
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Conclusions

- Sprayers are effective at washing
- Variables with Agitator need to be worked out
- Drum is a promising transportation mechanism
- Additional testing needed