Accessible Regions of EQIP
High Tunnels in Kentucky

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Where are High Tunnels in Kentucky?

- Map locations simply by using addresses of farmers using high tunnels.
- **Only EQIP county level data available.**
- New Focus:
  - ID Suitable areas of high tunnels.
  - “Map Locations of high tunnels.”
  - Determine service areas of high tunnels.
Examples of a High Tunnel

Source: www.nrcs.usda.gov

Source: www.aesop.rutgers.edu
<table>
<thead>
<tr>
<th>High Tunnel</th>
<th>Greenhouse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passively Ventilated and Heated</td>
<td>Heaters and Fans</td>
</tr>
<tr>
<td>1 Layer of Plastic</td>
<td>Multiple Layers of Plastic and Glass</td>
</tr>
<tr>
<td>Growing Season Extended</td>
<td>Year Round Production</td>
</tr>
<tr>
<td>In Ground Production</td>
<td>Container Based Production</td>
</tr>
<tr>
<td>Lower Cost Structure and Operating Cost</td>
<td>Higher Cost Structure and Operating Cost</td>
</tr>
</tbody>
</table>

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Environmental Quality Incentives Program

Introduction

The Environmental Quality Incentives Program (EQIP) is a voluntary program that provides financial and technical assistance to agricultural producers to plan and implement conservation practices that improve soil, water, plant, animal, air and related natural resources on agricultural land and non-industrial private forestland. EQIP may also help producers meet Federal, State, Tribal, and local environmental regulations.
Eligibility

• Livestock or agricultural production.
• Must have control over the land.
• Average adjusted nonfarm income: (AGI) < $1 million
• Ranked by priority:
  • Limited resource farmers (Income at or below poverty level)
  • Beginning farmers (Operating farm < 10 years)
  • Socially disadvantaged farmers (Minorities)
Data

- **Number of High Tunnels per County** (KY USDA NRCS)
  - Freedom of Information Act Request
  - Time Period: 2012 – October 5, 2014

- **Land cover data (2011)**
  (Multi-Resolution Land Characteristics Consortium)

- **Kentucky Road Centerline**
  (Kentucky Transportation Cabinet)
Number of High Tunnels per County Participating in the Environmental Quality Incentives Program

Legend
- 0
- 1 - 3
- 4 - 7
- 8 - 11
- 12 - 14

Source: USDA NRCS
By: Ryan Uthoff
Date: 9-28-2015
Site selection

• Year-round access to structure
• Access to water for irrigation
• Level site on high ground
  • Ensure water does not drain to the structure
  • Very slight pitch down the length of the tunnel for drainage
• Structure should receive full sun and be free from shadows

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<table>
<thead>
<tr>
<th>Number of Iterations</th>
<th>5 Miles</th>
<th>10 Miles</th>
<th>15 Miles</th>
<th>20 Miles</th>
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</thead>
<tbody>
<tr>
<td>10 Iterations</td>
<td>2,626,412</td>
<td>49,138,329</td>
<td>34,714,358</td>
<td>17,911,760</td>
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<td>25 Iterations</td>
<td>1,474,608</td>
<td>50,137,578</td>
<td>36,871,467</td>
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<tr>
<td>50 Iterations</td>
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<td>48,017,541</td>
<td>37,721,027</td>
<td>19,176,213</td>
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<tr>
<td>100 Iterations</td>
<td>803,506</td>
<td>48,255,396</td>
<td>37,545,145</td>
<td>19,431,157</td>
</tr>
</tbody>
</table>
Conclusion

• Further research can be performed to determine why high tunnels do or do not exist in these areas
  • Landscape
  • Eligibility criteria for EQIP
    • Counties with farmers with higher net income in farming and corporation owned farms might have a lower amount of high tunnels.
• Targeted advertising of EQIP
  • Target in underserved areas
  • Benefit farmers and the local community