Crop Water Use & Management
Lower Rio Grande Valley

Bob Wiedenfeld
AgriLife Research & Extension Center, Weslaco
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Projects

• Sugarcane crop water use & irrigation scheduling
• Sugarcane green vs burned harvested
• Sugarcane irrigation method
• Tillage system crop water use
• Bioenergy crop production
  – Sustainability
  – Annual oilseed crops
Evapotranspiration

<table>
<thead>
<tr>
<th>Date</th>
<th>1 Jan</th>
<th>1 Apr</th>
<th>15 Jun</th>
<th>30 Sep</th>
<th>31 Dec</th>
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</thead>
<tbody>
<tr>
<td>$K_c$</td>
<td>0.00</td>
<td>0.25</td>
<td>0.50</td>
<td>0.75</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Graph showing $K_c$ values over the year with a peak around 15 Jun and a decline towards 31 Dec.
Green vs Burned Harvest
Green vs Burned Harvest
Irrigation Method
Tillage Systems
Results

- Conservation tillage not easy to implement
- Crop residues, once incorporated, disappear quickly in a subtropical environment
- Water savings are not large
- Primary benefit – reduced inputs
BioEnergy – Cropping Systems

• Sustainability
  – Residue return
  – Fertilization
  – Crop rotation
BioEnergy – oilseed crops