Sorghums are important nongrain lignocellulosic feedstocks for biofuel production. Texas AgriLife Research has a very active sorghum program that boasts about 40,000 germplasm accessions available. These are from Africa, India, Australia, China, and other locales and exhibit extensive molecular and trait diversity. Sorghum has an excellent genome platform.

Nongrain feedstocks include high-tonnage sorghums, sugarcane, energy cane, forest products, sweet sorghum, switchgrass, crop residues, oilseed crops, microalgae, municipal solid waste, and urban waste.

Lignocellulosic Crops
High-tonnage Sorghum (Annual)
- Long canopy duration
- Drought tolerant
- High biomass accumulation (expect >15–20 tons/acre)

Sweet Sorghum (Annual)
- High sugar content
- Drought tolerant
- Medium biomass accumulation (5–10 tons/acre)

Energy Canes (Perennial)
- Subtropical production
- High water demand
- High biomass accumulation (20+ tons/acre)

Grasses (Perennial)
- Drought tolerant
- Marginal lands
- Medium biomass accumulation (5–10 tons/acre)

Sorghum Breeding: 4 Types of Sorghum
Grain Sorghum: grain, stover
Forage Sorghum: hay, grazing, silage
Sweet Sorghum: soluble sugars, bagasse
Energy Sorghum (High Tonnage): high biomass, stover

<table>
<thead>
<tr>
<th>Residue</th>
<th>Woody Biomass</th>
<th>Switch Grass</th>
<th>Forage Sorghum</th>
<th>Bioenergy Sorghum</th>
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</thead>
<tbody>
<tr>
<td>Biomass per acre per year that can be converted (DT)</td>
<td>2</td>
<td>5–10</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Estimated cost delivered to converter</td>
<td>$60+</td>
<td>$50–75</td>
<td>$60–90</td>
<td>$65</td>
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</tbody>
</table>

For more information, contact
Bill Rooney, Soil and Crop Sciences, Texas A&M University, College Station TX 77843
Ph: 979.845.2151 | E-mail: wlr@tamu.edu

http://AgriLifeResearch.tamu.edu