

# Disease Issues: Crop Management and Variety Choices

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# Louisiana Sugarcane Varieties Current & Near-release

<b>Variety</b>	<b>Acreage (%) (2008*)</b>
<b>HoCP 96-540</b>	<b>44</b>
<b>L 97-128</b>	<b>17</b>
<b>L 99-226</b>	<b>5</b>
<b>Ho 95-988</b>	<b>5</b>
<b>L 99-233</b>	<b>2</b>
<b>HoCP 00-950</b>	<b>1</b>
<b>L 01-283</b>	<b>-</b>
<b>L 01-299</b>	<b>-</b>
<b>L 03-371</b>	<b>-</b>
<b>HoCP 04-838</b>	<b>-</b>

Legendre and Gravois, 2009, Sugar Bulletin 87 (10) 17-22

# Major Diseases of Louisiana Sugarcane

<b>Disease</b>	<b>Type of Pathogen</b>
<b>Brown rust</b>	<b>fungus</b>
<b>Smut</b>	<b>fungus</b>
<b>RSD</b>	<b>bacteria</b>
<b>Leaf scald</b>	<b>bacteria</b>
<b>Mosaic</b>	<b>virus</b>
<b>Yellow leaf</b>	<b>virus</b>

# Disease Traits of Commercial Varieties

	HoCP 96-540	Ho 95-988	L 97-128	L 99-226	L 99-233	HoCP 00-950	L 01-283	L 01-299	L 03-371	HoCP 04-838
	Year of Release									
	2003	2004	2004	2006	2006	2007	2008	2009	?	?
<b>RSD</b>	<b>T</b>	<b>T</b>	<b>T</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>T</b>	<b>T</b>
<b>Leaf scald</b>	<b>R</b>	<b>R</b>	<b>R</b>	<b>MR</b>	<b>MR</b>	<b>R</b>	<b>R</b>	<b>R</b>	<b>R</b>	<b>MR</b>
<b>Smut</b>	<b>R</b>	<b>M</b>	<b>S</b>	<b>M</b>	<b>M</b>	<b>R</b>	<b>R</b>	<b>S</b>	<b>R</b>	<b>R</b>
<b>Rust</b>	<b>MS</b>	<b>S</b>	<b>M</b>	<b>M</b>	<b>M</b>	<b>M</b>	<b>M</b>	<b>R</b>	<b>R</b>	<b>R</b>
<b>Mosaic</b>	<b>R</b>	<b>R</b>	<b>R</b>	<b>MR</b>	<b>MR</b>	<b>R</b>	<b>R</b>	<b>R</b>	<b>R</b>	<b>R</b>
<b>Yellow leaf</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>R</b>	<b>R</b>	<b>S</b>	<b>S</b>	<b>R</b>	<b>?</b>

<b>Smut</b>	<b>Rust</b>	<b>Mosaic</b>	<b>Yellow leaf</b>	<b>RSD</b>
<b>L 97-128</b>	<b>Ho 95-988</b>	<b>L 99-233</b>	<b>L 01-283</b>	<b>L 99-233</b>
<b>L 01-299</b>	<b>HoCP 96-540</b>	<b>L 99-226</b>	<b>HoCP 96-540</b>	<b>L 99-226</b>
<b>Ho 05-988</b>	<b>L 97-128</b>		<b>L 97-128</b>	<b>L 01-283</b>
<b>L 99-233</b>	<b>HoCP 96-540</b>		<b>Ho 95-988</b>	<b>HoCP 00-950</b>
<b>L 99-226</b>	<b>L 97-128</b>		<b>L 99-226</b>	<b>L 01-283</b>
	<b>L 01-283</b>		<b>L 01-299</b>	<b>L 01-299</b>

<b>Disease</b>	<b>Pathogen</b>	<b>Method of spread</b>
<b>Brown rust</b>	<b>fungus</b>	<b>Airborne spores</b>
<b>Smut</b>	<b>fungus</b>	<b>Airborne spores, seed cane</b>
<b>RSD</b>	<b>bacteria</b>	<b>Mechanical, seed cane</b>
<b>Leaf scald</b>	<b>bacteria</b>	<b>Mechanical, wind-driven rain, seed cane</b>
<b>Mosaic</b>	<b>virus</b>	<b>Non-persistent aphids, seed cane</b>
<b>Yellow leaf</b>	<b>virus</b>	<b>Persistent aphids, seed cane</b>

# Managing Smut

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## Transmission of Smut in Seed Cane

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<b>Smut in seed cane source field (% whips)</b>	<b>Smut in Plant Cane (% whips)</b>	<b>Smut in 1st Ratoon (% whips)</b>
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**<5**

**0.3**

**5.3**

**5-10**

**1.5**

**8.6**

**>10**

**2.2**

**15.4**

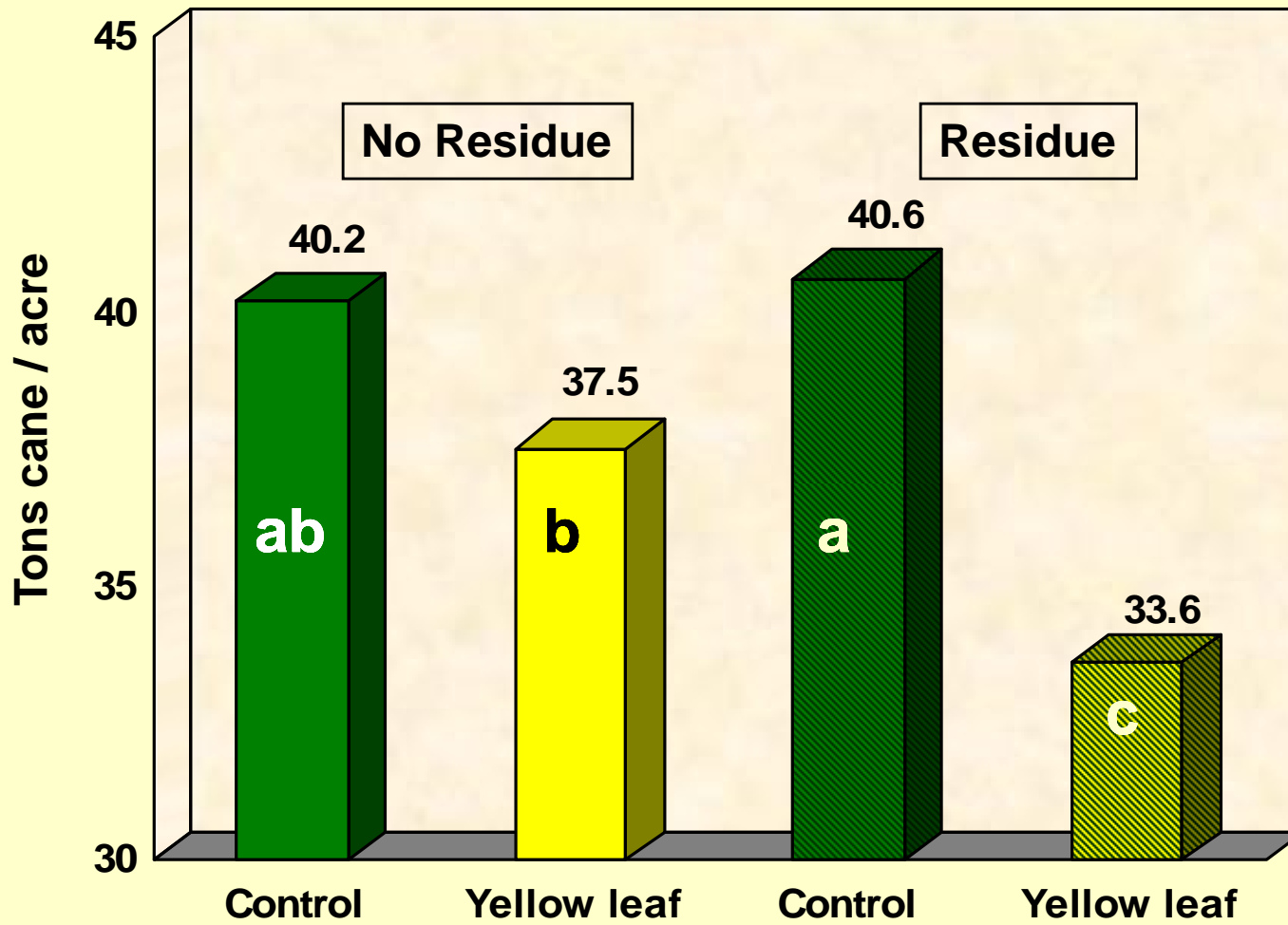
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# RSD / Residue

<b>Variety</b>	<b>RSD effect (% Cane Loss)</b>		
	<b>Residue</b>	<b>Removal</b>	<b>Overall</b>
<b>L 03-743</b>	<b>19</b>	<b>34</b>	<b>27</b>
<b>HoCP 04-809</b>	<b>18</b>	<b>3</b>	<b>10</b>
<b>HoCP 04-838</b>	<b>10</b>	<b>9</b>	<b>9</b>
<b>HoCP 96-540</b>	<b>Yields higher in RSD Treatments</b>		
<b>L 97-128</b>	<b>32</b>	<b>(8)</b>	<b>13</b>
<b>L 99-226</b>	<b>15</b>	<b>4</b>	<b>10</b>



# Cane Yield



Average of three crops  
LCP 85-384

## Orange Rust Rating of Louisiana Varieties

Variety	Breeding Cans	Nursery	Stage IV
HoCP 96-540	1+	2	-
L 97-128	1+	1	3
L 99-226	2	1+	3
Ho 95-988	1	2+	2+
L 99-233	1	1	1
HoCP 00-950	1+	1+	2+
L 01-283	0	0	-
L 03-371	1	-	-
HoCP 04-838	2+	2	-

# Managing Disease in Susceptible Varieties

- **Have an effective clean seed cane program**
  - RSD, leaf scald, yellow leaf, mosaic, smut
- **Residue management**
  - Yellow leaf, RSD
- **Avoid over-fertilization**
  - Rust
- **Variety diversity**
  - Minimize rust inoculum
  - Reduce opportunity for new races to develop

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