

The LL601 Presence in Commercial Rice

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Rice Research Station

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LLRICE601 Update

- **LLRICE601 is a related event of LLRICE62**
- **LLRICE601 was discontinued from the Bayer (Aventis) program in 2001**
 - based upon agronomic performance, LLRICE62 was chosen as Bayer's herbicide tolerant rice event.
- **Presence of LLRICE601**
 - Found in trace amounts in US commercial rice in 2006
 - USDA notified and investigation initiated
 - Safety information provided to government agencies
 - Deregulation petitioned as an extension of LLRICE62
 - USDA has deregulated LL601 in November
 - Deregulation expected to be positive for trade

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Foundation Seed Survey

- **Breeder / Foundation seed lots representing the public rice varieties**
 - US public sector rice breeders provided samples of their foundation seed lots
 - Bayer facilitated blind testing by commercial testing lab
 - USDA GIPSA verified PCR method specific for LLRICE601 was used.
- **Testing at increased sensitivity for seed**
 - Sensitivity detection limit for potential presence was 0.05% at the 95% confidence level.
 - Laboratory test of three 50gm seed samples (5000-6000 seed)
 - Using the USDA-verified method specific for LLRICE601

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Survey of the US Rice Seed Supply

Foundation seed lots

150 gm seed samples (6000-7000 seed) were submitted by rice breeders from each of the public institutions.

Each seed sample represented rice varieties currently in use in the respective states.

LLRICE601 was detected in samples of the 2003 Foundation seed lot of the variety Cheniere.

| <i>State</i> | <i>Seed lots</i> | <i>Not detected</i> | <i>Detected</i> |
|--------------------|------------------|---------------------|-----------------|
| California | 24 | 24 | 0 |
| Louisiana | 19 | 18 | 1 |
| Texas | 28 | 27 | 1 |
| Mississippi | 1 | 1 | 0 |
| Arkansas | 45 | 45 | 0 |
| Total: | 117 | 115 | 2 |

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Seed survey finds trace amounts

- **Cheniere 2003 foundation seed lot – tested positive for a presence of LLRICE601.**
- **Cheniere 2005 and all other foundation seed lots tested negative, that is, no detections - sensitive test to find 0.05% with 95% confidence.**
- **Seed lots tested from Louisiana, Arkansas, Texas, Mississippi and California.**
- **Presence estimated to be 6 seed in 10,000 or 0.06% in the seed supply.**

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Acres of Cheniere Seed

- Seed derived from the 2003 Foundation indicated in white
- Seed derived from the 2005 Foundation indicated in light green
- Source: AOSCA statistics
- * 2006 estimated

| | 2003 | 2004 | 2005 | 2006* |
|-------------------|------|-------|------|-------|
| Foundation | | | | |
| AR | 0 | 0 | 0 | 10 |
| IL | 0 | 0 | 0 | 0 |
| LA | 28 | 0 | 23 | 0 |
| MO | 0 | 11 | 11 | 0 |
| MS | 8 | 6 | 5 | 4 |
| TX | 13 | 0 | 0 | 0 |
| | 49 | 17 | 39 | 14 |
| Registered | | | | |
| AR | 0 | 415 | 150 | 216 |
| IL | 0 | 102 | 50 | 38 |
| LA | 1431 | 1143 | 585 | 470 |
| MO | 30 | 182 | 90 | 40 |
| MS | 0 | 368 | 463 | 270 |
| TX | 1204 | 216 | 191 | 40 |
| | 2665 | 2426 | 1529 | 1074 |
| Certified | | | | |
| AR | 0 | 4573 | 3792 | 6027 |
| IL | 0 | 0 | 30 | 88 |
| LA | 28 | 5344 | 3504 | 3336 |
| MO | 0 | 78 | 166 | 182 |
| MS | 8 | 2153 | 1711 | 1853 |
| TX | 13 | 1613 | 623 | 519 |
| | 49 | 13761 | 9826 | 12005 |

Acres of Cheniere Seed

- Seed derived from the 2003 Foundation indicated in white
- Seed derived from the 2005 Foundation indicated in light green
- Source: AOSCA statistics
 - * 2006 estimated
- Testing for LLRICE601

⊖ Detection

⊕ No detection

| | 2003 | 2004 | 2005 | 2006* |
|-------------------|------|-------|------|-------|
| Foundation | | | | |
| AR | 0 | 0 | 0 | 10 |
| IL | 0 | 0 | 0 | 0 |
| LA | 28 | 0 | 23 | 0 |
| MO | 0 | 11 | 11 | 0 |
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Harvested Acres of Cheniere Paddy Rice

| State | 2005 | 2006 |
|--|------------------|------------------|
| Arkansas | 114,450 | 300,000 |
| Louisiana | 121,785 | 83,321 |
| Mississippi | 4,281 | 3,800 |
| Missouri | 27,820 | 50,000 |
| Texas | 30,353 | 20,327 |
| Total acres in Cheniere | 298,689 | 482,948 |
| USDA Long Grain acres | 2,734,000 | 2,261,000 |
| % of long grain acres in Cheniere | 11% | 21% |

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Liberty Link AP Seed Elimination Program for 2007

- **No Cheniere planted for Commercial production**
- **Foundation and Registered seed of Cheniere may be planted for seed stock increase provided the parent seed tests negative**

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Seed varieties (other than Cheniere) will be tested and must test negative within the specified detection levels to be offered for sale

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Required documentation for first point of delivery or sale

1. Certificate stating seed purchased has tested negative within the specified detection levels
2. Receipt showing the amount of seed purchased
3. FSA form of certified acres planted

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All Rice Research Station seed that will be offered for sale in 2007 has been sampled by LA Dept. of Ag. and Forestry and analyzed by BioDiagnostics Lab in Wisconsin for the presence of any LL traits

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Seed Sampling Procedure

- **30,000 grains are subdivided into 6 pools of 5,000 seed each. Each pool is then sampled. Results are report as positive pools,**
- **For example:**
- **6 negatives = no detections**
- **1 or 2 positive pool are reported as negative within the specified range (0.01%)**
- **3 or more positive pools will mean that seed lot has failed and cannot be used for seed**

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- **All Rice Research Station seed available for sale in 2007 has tested negative in all pools**
- **Includes foundation seed of: Bengal, Cheniere, Cocodrie, Dellrose, Ecrevisse, Jupiter, Pirogue, Trenasse, and TORO-II**
- **Also non-certified lot of Della**

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- **In addition, all head row seed that will be used for planting seed fields in 2007 on the Rice Research Station has been tested and found to be negative**

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