Aflatoxin Concerns
2019 Crop

March 4, 2020
Three Messages:

1. There is aflatoxin contamination in the 2019 Southeast Peanut Crop.
2. This is largely due to Mother Nature, conditions were perfect to cause this problem.
3. The industry can work thru this crop, but there will be challenges.
Historical JLA USDA Aflatoxin Fail Rates (>15ppb avg.) for SE Runners by Crop Year

* All 2018 Crop Data for Oct. 2019 is missing from this
Southeast Runner USDA Fail (>15ppb) Trends 2010 - 2019 Crop Years
2019 Crop JLA Southeast Runner USDA Avg. Aflatoxin Results by Grade thru Feb. 29, 2020

Aflatoxin Levels - parts per billion

- 0 ppb
- 1-5 ppb
- 6-10 ppb
- 11-15 ppb
- 16-30 ppb
- Over 30 ppb

Percentage %

2019 SE Crop - NO. One Runners
2019 SE Crop - Medium Runners
2019 SE Crop - Jumbo Runners
2019 SE Crop - Runner Splits
2019 Crop JLA USDA Aflatoxin Results by Region and Market Type

Aflatoxin Levels - parts per billion

- SW Crop (Runners)
- SW Crop (Spanish)
- SW Crop (Virginias)
Early season drought in April and May postponed planting, esp. dryland

Moderate to severe drought conditions for 6-8 weeks leading up to harvest

Record high temperatures late September early October

Harvest delays from hard, dry soils

Late October rains caused further delays
  ✓ Rewetting of windrowed peanuts; post-harvest aflatoxin
  ✓ 2+ weeks in field
  ✓ Weakened vine integrity; lower yields
Early 2019 Season Southeast Drought

April 2, 2019  
U.S. Drought Monitor  
Southeast

April 16, 2019  
U.S. Drought Monitor  
Southeast

April 30, 2019  
U.S. Drought Monitor  
Southeast

May 14, 2019  
U.S. Drought Monitor  
Southeast

May 28, 2019  
U.S. Drought Monitor  
Southeast
Aflatoxin Contributors 2019

- High soil temperatures (76-90°F)
- Drought stress growing season, last 30-45 days of maturation

Late season rains after drought conditions leading to post-harvest aflatoxin

Visible plant stress from drought conditions in late September

Turned vines that laid in windrows for several weeks in late October
Weather Contributors = Damaged Kernels

Source: JLA personal photos taken throughout 2019 growing season
Peanut Harvest (Sept. thru Oct.) Max Daily Avg. Temperatures 2010 - 2019
Crops - Tifton, GA

Sept. Max Daily Avg.
2019 Crop Harvest Rainfall (September and October)
Across Georgia

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Donalsonville, GA</td>
<td>0.5</td>
<td>3</td>
</tr>
<tr>
<td>Tifton, GA</td>
<td>0.46</td>
<td>4.2</td>
</tr>
<tr>
<td>Statesboro, GA</td>
<td>0.73</td>
<td>8.1</td>
</tr>
</tbody>
</table>

Legend:
- Sept. 2019 Rainfall (in.)
- Oct. 2019 Rainfall (in.)
Recent Drought Year Comparisons

October 5, 2010
U.S. Drought Monitor
Southeast

October 4, 2011
U.S. Drought Monitor
Southeast

October 4, 2016
U.S. Drought Monitor
Southeast

October 1, 2019
U.S. Drought Monitor
Southeast

Intensity:
- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought
August 22-28, 2019 SE Crop Pre-Drought Conditions
October 3-9, 2019 SE Crop Drought Conditions
How Do We Handle?

✓ Recognize the situation.

✓ Good communication, planning and patience.

✓ Diagnose and minimize high risk kernels
  • Damage, low density, and smaller grades (immaturity)
  • Blanching

✓ Understand your testing regime and the costs/risks that you are willing to accept.
How Do We Handle?

Commercial Implications

✓ Sampling is the largest source of variation in the aflatoxin testing program.

✓ Sampling variation can be reduced by considering larger sample sizes.

✓ This comes at a cost that must be balanced against risk tolerance.

✓ In a high risk crop year, supplemental testing makes sense.
Remember why:

https://www.smithsonianmag.com/smart-news/23-kids-peanut-allergies-were-cured-180954053/
Thank You