U.S. Flue-Cured Tobacco Situation & Outlook

Dr. Blake Brown
Hugh C. Kiger Professor
Agriculture & Resource Economics
College of Agriculture & Life Sciences
## Flue-Cured Acres Harvested:

<table>
<thead>
<tr>
<th>State</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>228,800</td>
<td>245,300</td>
<td>220,000</td>
<td>213,500</td>
<td>209,500</td>
</tr>
<tr>
<td>NC</td>
<td>180,000</td>
<td>192,000</td>
<td>172,000</td>
<td>165,000</td>
<td>163,000</td>
</tr>
<tr>
<td>VA</td>
<td>21,500</td>
<td>22,500</td>
<td>21,500</td>
<td>22,000</td>
<td>22,000</td>
</tr>
<tr>
<td>SC</td>
<td>14,500</td>
<td>15,800</td>
<td>13,000</td>
<td>13,000</td>
<td>12,000</td>
</tr>
<tr>
<td>GA</td>
<td>12,800</td>
<td>15,000</td>
<td>13,500</td>
<td>13,500</td>
<td>12,500</td>
</tr>
</tbody>
</table>
U.S. Flue Cured Production
(pounds)

2013
2014
2015
2016
2017

GEORGIA
NORTH CAROLINA
SOUTH CAROLINA
VIRGINIA
U.S. Flue-Cured Tobacco: Average Price ($ per pound)

Year | Price
--- | ---
2013 | 2.115
2014 | 2.026
2015 | 1.873
2016 | 1.96
Global Supply: U.S., Brazil and Zimbabwe
Flue-Cured Tobacco Production

US Flue-Cured Exports and Domestic Disappearance

![Bar chart showing US flue-cured exports and domestic disappearance from 2005-2006 to 2016-2017. The chart indicates a decrease in exports and an increase in domestic use over the given period.](attachment:image.png)
Contracted pounds for 2018???

- Global stocks of flue-cured are not excessive
- US $ is not as strong relative to the Brazilian Real as last year
- Brazilian production is up but not excessive…

=> not much reason to expect big changes in contracted pounds…
H2A Labor: Adverse Effect Wage Rates for North Carolina

<table>
<thead>
<tr>
<th>Year</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$9.70</td>
<td>$9.68</td>
<td>$9.87</td>
<td>$10.32</td>
<td>$10.72</td>
<td>$11.27</td>
<td>$11.46</td>
</tr>
</tbody>
</table>
Labor: H2C....?
Next Generation Tobacco Products...Implications for Growers
• “Philip Morris could stop making conventional cigarettes” BBC News November 30, 2016

• iQOS did well in test markets…PM plans to introduce into additional markets
The progress of next-generation products is key for new plants

• The whole vapour category is forecast to grow to USD34 billion by 2021.

• Forecast data suggests that by 2021 heat-not-burn will be the single largest vapour category with 45% (USD15.4 billion).

Euromonitor International, Sept 2017
Building capacity for next-generation products: PMI leading the way

CURRENT AND FUTURE TRENDS IN CIGARETTE MANUFACTURING

• **PMI is aiming to have total annual installed capacity of 100 billion heat sticks by the end of 2018.** This currently represents 12% of PMI’s total cigarette shipments.

<table>
<thead>
<tr>
<th>Location</th>
<th>Action</th>
<th>Invested (million)</th>
<th>Start date</th>
<th>Capacity</th>
<th>Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bologna region, Italy (2 factories)</td>
<td>New factories</td>
<td>EUR500 +EUR500</td>
<td>2014 and 2016</td>
<td>Currently 30 billion heat sticks</td>
<td>Heets for IQOS</td>
</tr>
<tr>
<td>Aspropyrgos, Greece</td>
<td>Upgrade</td>
<td>EUR300</td>
<td>Jan 2018</td>
<td>20 billion heat sticks</td>
<td>Heets for IQOS</td>
</tr>
<tr>
<td>Dresden, Germany</td>
<td>New factory</td>
<td>USD320</td>
<td>Early 2019</td>
<td></td>
<td>Heets for IQOS</td>
</tr>
<tr>
<td>Otopeni, Romania</td>
<td>Upgrade</td>
<td>EUR490</td>
<td>2020</td>
<td></td>
<td>Heets for IQOS</td>
</tr>
</tbody>
</table>

Euromonitor International, Sept 2017
Preventing for next-gen products: BAT and JTI are also taking action

- BAT will turn its factory in Romania into its second largest factory in Europe investing EUR1 billion.
- BAT will start producing glo iFuse Neopods for its next-generation heated tobacco product.
- Other BAT factories that will receive noticeable upgrades to accommodate the production of glo are located in South Korea and Russia.
- One of the main goals of this restructuring is to turn the plant into a global hub for exporting Neosticks for glo.

Euromonitor International, Sept 2017
JTJ: Since Ploom was released, the popularity of the device has soared immensely.

Currently, JTI is unable to keep up with the demand.

JTJ will invest about USD481 million in factories in Japan and China.

The ultimate goal of the company is to increase production capacity tenfold in the course of the next year.

JTJ also works on Ploom in Trier, Germany, where the company owns a state-of-the-art research and development centre.

Euromonitor International, Sept 2017
FDA REGULATION: Modified Risk Tobacco Products

MRTP Applications Currently Under Scientific Review

<table>
<thead>
<tr>
<th>Product/ Company</th>
<th>Comment Period Closes</th>
<th>Regulations.gov Docket #</th>
<th>TPSAC Meeting Date/Info</th>
</tr>
</thead>
<tbody>
<tr>
<td>IQOS system with Marlboro Heatsticks/Philip Morris Products S.A.</td>
<td>TBD**</td>
<td>FDA-2017-D-3001</td>
<td>January 24-25, 2018</td>
</tr>
</tbody>
</table>

* Due to the large size of the Philip Morris Products S.A. MRTP applications, FDA will post the application documents in batches on a rolling basis as they are redacted in accordance with applicable laws.
What do we know about the leaf needs for iQOS?

• High quality leaf…but what “high quality” means is not well defined

• Consistent quality…how can we make “quality” more consistent?

• Strict adherence to GAP

• Leaf quantity per stick will be 1/3-1/2 that of combustibles by weight

• Leaf in the Heet stick is highly processed
Who is in the best position to service this new market?

• “larger commercial growers” – major HNB manufacturer
• Growers who can exert more control over growing and curing
  – Computerized curing
  – Hand harvest for higher quality
  – GAP compliant
  – What can be done to exert more control over the growing process?
• Italy, US, maybe Brazil
• Probably flue-cured growers
• But will buyers be willing to pay for higher costs?
Heat-not-Burn: Implications for Tobacco Scientists

• Production practices & breeding that increase control over consistency of crop

• Production practices & breeding that target characteristics required for HNB
Some Take-Aways

• Exchange rates more favorable toward US: $ is slightly weaker, Brazilian Real is stronger
Some Take-Aways

- Exchange rates more favorable toward US: $ is slightly weaker, Brazilian Real is stronger
- Despite increased Brazilian production, global stocks are not excessive
Some Take-Aways

• Exchange rates more favorable toward US: $ is slightly weaker, Brazilian Real is stronger

• Despite increased Brazilian production, global stocks are not excessive

• Will we see 2018 contracted pounds remain near 2017 levels?
Some Take-Aways

• Exchange rates more favorable toward US: $ is slightly weaker, Brazilian Real is stronger
• Despite increased Brazilian production, global stocks are not excessive
• Will we see 2018 contracted pounds remain near 2017 levels?
• Labor reform…
Some Take-Aways

- Exchange rates more favorable toward US: $ is slightly weaker, Brazilian Real is stronger
- Despite increased Brazilian production, global stocks are not excessive
- Will we see 2018 contracted pounds remain near 2017 levels?
- Labor reform…
- Heat-not-burn….potentially a game changer
Some Take-Aways

• Exchange rates more favorable toward US: $ is slightly weaker, Brazilian Real is stronger
• Despite increased Brazilian production, global stocks are not excessive
• Will we see 2018 contracted pounds remain near 2017 levels?
• Labor reform…
• Heat-not-burn….potentially a game changer
• Continued consolidation of flue-cured farms