Can Africa Escape the Maize?:
A Look Into the History of How One Crop Changed the Diet of an Entire Continent
General Outline

I. Refresher
   – Origin
   – Types
   – Cultivation
   – Dispersal
   – Uses

II. Africa
   – Arrival
   – Consumption
   – Explanations
   – Summary & Implications
Origin of Maize

*Zea may* (Gramineae) “grass family”

- Original habitat & ancestor obscure
- Best Estimate:
  - Teosinte was the wild ancestor of maize
  - Central America Mexico around (7,000 yrs. ago)

http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=10975&oldid=5678
Common Types of Maize

Around 50 Species with 5 phenotypes

- Flour
- Sweet
- Pop
- Dent (soft) → soups
- Flint (harder) → gruel

(http://www.oznet.ksu.edu/kansascrops/corn_class.htm)
Consumption of White vs. Yellow Maize

- 90% of Africa's total maize production is white
- 90% of world production of maize is yellow

(McCann, 112)
Cultivation/Dispersal

• Maize does not exist in a wild state

• Not naturally dispersed
  – Husk covers seeds

• Cannot reproduce without human intervention

(Warman, 27)
Uses: Developed World

As Industrial Raw Material:
Embryo \(\rightarrow\) cornstarch etc.
Grain \(\rightarrow\) alcoholic beverages
Stalks \(\rightarrow\) paper and yarn
Pith \(\rightarrow\) light packing material
Inner husks \(\rightarrow\) cigarette papers
Cobs \(\rightarrow\) fuel, explosives, plastics, synthetic rubber and nylon

http://www.faculty.ucr.edu/~legneref/botany/majcerea.htm
Uses: Africa

- What proportion of harvested maize is used as a food resource?

- 95%!
Arrival

• 1500→ The New World provided Africa with many new cultigens:
  – cassava, beans, potatoes, and maize
• African natives used a variety of maize until 20th century
Arrival of Hybrids

20th century:
• Large scale Industrialization
• Monocropping of hybrid white corn
• Colonial Rhodesia (1964) SR-52
  • 48% increased yields
  • 150 day long season
  • No fertilizer

Farmers Happy:
• high yielding & profitable
• Less labor intensive than traditional crops

(Staatz & Eicher, 553)
http://ohhs71.tripod.com/sitebuildercontent/sitebuilderpictures/.pond/corn-emil.jpg.w560h379.jpg
Consumption

- Maize displaced indigenous crops that were higher in nutrition:
  
  **Sorghum**
  ![Sorghum](http://www.flickr.com/photos/marksda1/1811287292/)

  **Yams**
  ![Yams](http://www.farmsciencegenetics.com/stock/pearl_millet_thumb.jpg)

  **Millet**
  ![Millet](http://www.onlineathens.com/images101003)
Consumption

20th cent on: Maize continued to spread across Africa

(McCann, 123)
Maize Consumption: 2001

TABLE I:
Maize Calorie Consumption as % of Total Diet

<table>
<thead>
<tr>
<th>Country</th>
<th>% of Total Diet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ibadan</td>
<td>56</td>
</tr>
<tr>
<td>Imeri</td>
<td>54</td>
</tr>
<tr>
<td>Lagos</td>
<td>46</td>
</tr>
<tr>
<td>Ekiti</td>
<td>45</td>
</tr>
<tr>
<td>Edo</td>
<td>44</td>
</tr>
<tr>
<td>Osun</td>
<td>44</td>
</tr>
<tr>
<td>Oyo</td>
<td>40</td>
</tr>
<tr>
<td>Ekiti</td>
<td>37</td>
</tr>
<tr>
<td>Oyo</td>
<td>36</td>
</tr>
<tr>
<td>Oselu</td>
<td>36</td>
</tr>
<tr>
<td>Osogbo</td>
<td>34</td>
</tr>
<tr>
<td>Ibadan</td>
<td>30</td>
</tr>
<tr>
<td>Imeri</td>
<td>30</td>
</tr>
<tr>
<td>Lagos</td>
<td>26</td>
</tr>
<tr>
<td>Ekiti</td>
<td>26</td>
</tr>
<tr>
<td>Oyo</td>
<td>25</td>
</tr>
<tr>
<td>Ekiti</td>
<td>25</td>
</tr>
<tr>
<td>Oselu</td>
<td>20</td>
</tr>
<tr>
<td>Osogbo</td>
<td>17</td>
</tr>
<tr>
<td>Ibadan</td>
<td>17</td>
</tr>
<tr>
<td>Imeri</td>
<td>17</td>
</tr>
<tr>
<td>Lagos</td>
<td>15</td>
</tr>
</tbody>
</table>

(McCann, 4)
Maize Consumption 2002


(McCann, 10)
Possible Explanations

- Hammer Mill 1920s
- Cheaper processing
- Maize vs. millet & sorghum
- No de-hulling prior to hopper for grinding

(Smale and Jayne, 19)
(Shopo 1985) as cited in (Smale and Jayne)
Possible Explanations

• British starch market: 1920’s
  – Demand for white maize
    • Primarily dent
    • Easier on mills

(Smale and Jayne, 19)
Summary & Implications

• Since the arrival of maize in the 1500’s:
  – Grown to be the most consumed food in the continent
  – Poor nutrition has emerged due to a high dependency on maize as top food source
  – Monocropping still a risk to farmers
QUESTIONS?

http://en.wikipedia.org/wiki/File:CornWaterTowerRochesterMNday.jpg
http://www.agry.purdue.edu/ext/corn/pix/FldofCorn.jpg