Comparison of cowpea and groundnut haulm trading in urban and rural fodder markets in Niger


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Introduction

In West Africa 80% of small holder farmers are living in mixed crop-livestock/agro-pastoral systems.

Niger, multiply constrained:
- Poorest country of the world
- Harsh climates,
- Extreme maximum temperatures, decreasing rainfall
- Globally highest population growth
- Rapid urbanization
- Demographic pressure
- Climate change

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Niger Population(M)</td>
<td>17.2</td>
<td>55</td>
</tr>
</tbody>
</table>

Source: Statistique INdl.2014
- Agriculture expansion in marginal lands
- Livestock keeping in urban and peri-urban areas as a livelihood strategy but constraint by feed scarcity

- Cowpea (*Vigna unguiculata*) is number one legume crop, followed by Groundnut (*Arachis hypogaea*) in Niger.

- Farmers grow and market these multi-purpose crops for food (grain) and fodder (haulm) with anecdotal evidence suggesting the latter becoming more important

- To better understand these demands, trading and pricing of cowpea and groundnut haulms were investigated in urban and rural Fodder Markets in Niger.

### Table: Groundnut cultivars

<table>
<thead>
<tr>
<th>Groundnut cultivars</th>
<th>Gain (g/d)</th>
</tr>
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<tbody>
<tr>
<td>ICGV 89104</td>
<td>137</td>
</tr>
<tr>
<td>ICGV 9114</td>
<td>123</td>
</tr>
<tr>
<td>TMV 2</td>
<td>111</td>
</tr>
<tr>
<td>ICGS 76</td>
<td>76</td>
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<tr>
<td>ICGS 11</td>
<td>76</td>
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<tr>
<td>DRG 12</td>
<td>66</td>
</tr>
<tr>
<td>ICGS 44</td>
<td>65</td>
</tr>
<tr>
<td>ICGV 86325</td>
<td>83</td>
</tr>
<tr>
<td>ICGV 92020</td>
<td>95</td>
</tr>
<tr>
<td>ICGV 92093</td>
<td>109</td>
</tr>
<tr>
<td>Prob &gt; F</td>
<td>0.02</td>
</tr>
</tbody>
</table>
Methodology

- Maradi and Tillabery districts were purposively selected.

- Selection criteria: cowpea and groundnut growing areas and 0.35 aridity index, 70 habitation km$^2$ population density.

- Total 4 markets: two rural and two urban

- Focus group discussion with randomly five traders and five farmers from each markets. Haulms were visually scored by traders and farmers for quality.
- One year survey, on bimonthly basis price of haulms of cowpea and groundnut along with collection of feed samples from July 2014 to June 2015. Grain prices were also collected.

- Haulms were analysed for nitrogen (N), neutral (NDF) and acid (ADF) detergent fiber, acid detergent lignin (ADL), *in vitro* organic matter digestibility (IVOMD) and metabolizable energy using NIRS at ILRI India.

- Data were analysed by ANOVA.
Results

-Cowpea haulm was more in demand than groundnut haulm.

-Cowpea haulm (average 162.43 CFA/kg) were sold consistently at higher prices than groundnut haulm (119.50 CFA/kg).

-Haulm prices were lowest after harvest.
Average price ratio of:
cowpea grain to haulm was 2.4:1.

Average price ratio of
Groundnut grain to haulm
was 4.0:1.
Trader and farmer perception on quality was green leafy haulm perceived to be high quality, yellow coloured medium and leaves infested with moulds, insects as low

Cowpea haulm fodder quality traits were consistently superior to those of groundnut haulm.

Significant difference in haulm for N p<.0001), ADF (p=0.01), ME (p=0.03), IVOMD (p=0.00)
Sales prices at urban markets were about twice that at rural markets.

Niamey 233.93 CFA/kg, Kollo- 112.77 CFA/kg
Maradi-132.91 CFA/kg, Gazaoua-83.65 CFA/kg

Significant difference in average price mean (140.50 CFA/kg), in rural and urban markets (p<.0001), in cowpea and groundnut haulm (p=0.0007).

Significant variation in prices between rural and urban markets and haulm (p=0.0034) types.
Conclusion

Farmers can make significant additional income from selling of cowpea, groundnut haulm and cowpea and groundnut breeder should pay attentions to haulm yields and disease resistance.

The high price premium of cowpea relative to groundnut haulm suggest that attention should also be given to haulm fodder quality.