Introduction

- The multidisciplinary research project UrbanFoodPlus aims at developing site-specific, farmer-tailored innovations for improved agricultural production, food safety, and value chains in four major West African cities.
- As an integral part, long-term field data were collected in animal husbandry systems.

Feeding practices and animal performances were monitored on farm to identify options to improve current cattle and pig husbandry practices in Ouagadougou.

Methods

- After a baseline study of 181 farms conducted in 2014, 21 farms were selected that represent the livestock farm diversity across Ouagadougou.
- On farm monitoring took place every 6-10 weeks over a period of 16 months.
- Measurements included animal weighing, quantification of feed offered to groups and individuals (Fig. 1), feed sampling and qualitative analysis.
- Metabolizable energy (ME) offered was compared to the animals’ requirements using estimation formulas and literature values.

Results

Tab. 1: Average weight gains (g/day) of beef and dairy cattle as well as pigs during early dry season (EDS), late dry season (LDS) and rainy season (RS).

<table>
<thead>
<tr>
<th>Animal Type</th>
<th>Breed</th>
<th>n</th>
<th>EDS</th>
<th>LDS</th>
<th>RS</th>
<th>SEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef Cattle</td>
<td>Local Zebu</td>
<td>593</td>
<td>189</td>
<td>75</td>
<td>374</td>
<td>13.3</td>
</tr>
<tr>
<td></td>
<td>Sahelian Zebu</td>
<td>62</td>
<td>387</td>
<td>603</td>
<td>599</td>
<td>46.7</td>
</tr>
<tr>
<td>Dairy Cattle</td>
<td>Exotic Crossbred</td>
<td>390</td>
<td>287</td>
<td>83</td>
<td>70</td>
<td>17.5</td>
</tr>
<tr>
<td></td>
<td>Local Zebu</td>
<td>1477</td>
<td>59</td>
<td>278</td>
<td>204</td>
<td>6.3</td>
</tr>
<tr>
<td></td>
<td>Sahelian Zebu</td>
<td>669</td>
<td>190</td>
<td>111</td>
<td>234</td>
<td>12</td>
</tr>
<tr>
<td>Pigs</td>
<td>Crossbred Pig</td>
<td>667</td>
<td>103</td>
<td>109</td>
<td>78</td>
<td>4.4</td>
</tr>
<tr>
<td></td>
<td>Local Pig</td>
<td>730</td>
<td>81</td>
<td>54</td>
<td>52</td>
<td>3.2</td>
</tr>
</tbody>
</table>

Colors highlight particularly high (green) and low (red) values.

SEM: Standard error of the mean.

Conclusions

- Growth potential of the animals by far not exhausted
- High variability in feed offered across farms, animal types and seasons.
- Optimization potential regarding the adjustment of feed offer to the requirements of individuals or homogenous groups.

- Depending on animal and breed type, seasonal patterns of weight change were apparent (Tab. 1), along with carry over effects to the subsequent season.
- For pigs, average weight gain was lowest during rainy season when most piglets were born (Tab. 1).
- Adequately fed crossbred pigs and local zebu showed the highest growth potential (data not shown).

- In all pigs and crossbred beef cattle, feed conversion varied from 1 to 8, while values of 13 were reached in local zebu. In dairy cattle, feed conversion ratio was very poor (Fig. 2).
- Across systems, feed offered at the farm supplied about 1.2 times the required amount of ME, even when animals had access to pasture (Fig. 3).
- In 37% of the observed cases (Fig. 3), the animal’s energy requirement was not met.
- Only in 23% of the observed cases, the animal was adequately fed as far as energy supply was concerned (Fig. 3).

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