Potentials and constraints of little bag silage (LBS) for smallholders in Honduras

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Introduction

- Silage making increases dry season feed availability
- Little bag silage (LBS) is seen as a promising silage innovation for smallholders
- Research objective: to evaluate potentials and constraints of LBS under Honduran smallholder conditions

Methods

- Innovation with LBS was stimulated during farmer trainings and field days in different areas
- Participatory evaluations, experiments, interviews

Potentials

Technological aspects

- Rapid filling, easy handling, marketability
- Use of small amounts of high-quality forages
- Low initial investment cost
- Low requirement for labour and equipment

Silage extension aspects

Use of LBS as tool in farmer trainings:

- Visualization of silage principles and proper management
- Experimentation with different treatments and innovations
- Learning by doing at a small scale stimulates adaptation and adoption

Evaluation of different plastic bags

Research areas in Honduras

Case study: Participatory experimentation with differently treated Brachiara brizantha cv. Toledo silages

<table>
<thead>
<tr>
<th>Treatment</th>
<th>DM (%)</th>
<th>pH</th>
<th>Smell (1-5)</th>
<th>Smell ranking</th>
<th>Losses (%)</th>
<th>Range and (average)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Untreated without additive</td>
<td>40</td>
<td>4.0</td>
<td>5</td>
<td>0-100 (50)</td>
<td>22</td>
<td>2-44.2</td>
</tr>
<tr>
<td>Untreated with molasses (6%)</td>
<td>40</td>
<td>4.0</td>
<td>5</td>
<td>0-100 (50)</td>
<td>22</td>
<td>2-44.7</td>
</tr>
<tr>
<td>Untreated with additive</td>
<td>40</td>
<td>4.0</td>
<td>5</td>
<td>0-100 (50)</td>
<td>22</td>
<td>2-43.9</td>
</tr>
<tr>
<td>Wilted without additive</td>
<td>40</td>
<td>4.0</td>
<td>5</td>
<td>0-100 (50)</td>
<td>22</td>
<td>2-36.0</td>
</tr>
<tr>
<td>Wilted with molasses (6%)</td>
<td>40</td>
<td>4.0</td>
<td>5</td>
<td>0-100 (50)</td>
<td>22</td>
<td>2-44.5</td>
</tr>
<tr>
<td>Wilted with sugar cane (20%)</td>
<td>40</td>
<td>4.0</td>
<td>5</td>
<td>0-100 (50)</td>
<td>22</td>
<td>2-24.4</td>
</tr>
<tr>
<td>Wilted with dissolved sugar blocks (6%)</td>
<td>40</td>
<td>4.0</td>
<td>5</td>
<td>0-100 (50)</td>
<td>22</td>
<td>2-10-100 (40)</td>
</tr>
</tbody>
</table>

1: disgusting; 2: bad; 3: acceptable; 4: good; 5: very good

Constraints

Technological constraints

- Flimsy plastic bag material
- Pests, especially mice
- Lack of adequate storage facilities
- DM content and ensilability of forages
- Inappropriate silage preparation
- High variability of spoilage losses

Constraints to adoption

- Cost and availability of suitable bags
- Non-availability of chopper
- Tradition and farmers’ preferences
- Availability of alternative low cost feeds
- Small effect on milk production
- Limited adoption

Innovation example

The use of a removable mould (e.g. plastic barrel) eases compaction and protects plastic from stretching and tearing

Forage compaction Removing the mould

Conclusions

LBS technology proved useful

- as a demonstration, experimentation and learning tool that can be used as adaptable prototype in farmer trainings and field days;
- to introduce small-scale farmers to silage technology at low risk.

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