Feed intervention >> Feeding management

**Calf feeding - rearing on milk replacers**

---

**Description**

- A calf milk replacer is an economical, nutritionally complete fluid diet for calves 3 weeks of age and older. Should be fortified with all essential vitamins and minerals, including organic selenium.
- The purpose of milk replacers for pre-weaned dairy calves is to take the place of whole milk when whole milk is not available or not economical to feed.
- As a general rule of thumb, milk replacers should contain 20% protein and 10% fat with the majority of these ingredients derived from animal sources.
- High quality milk replacers can provide similar growth and development as whole milk.
- Milk replacers can be substituted for whole milk, but calves still require quality colostrum for the first 3 days from birth.

**Key benefits**

- Feeding high quality calf milk replacers can be cheaper than feeding whole saleable cow’s milk.
- Lowers the risk of disease: Feeding milk replacers prevents the transfer of diseases from cow to calf; e.g. in the case of paratuberculosis.
- It is convenient as milk replacers can be fed at any time of day.
- Longer shelf life: Milk replacers can be stored for up to 12 months
- Milk replacer can encourage early intake of grain and forage.
- The fermentation of carbohydrates in calf starter stimulates the growth of the rumen papillae that absorbs energy from the rumen and so enhances rumen development.

**Key limitations**

- Feeding milk replacers requires a high level of hygiene of the mixing and feeding equipment.
- Milk replacers are not sterile and can become contaminated and support bacterial growth.
- The quality and price of milk replacers can vary significantly due to factors such as ingredient quality, manufacturing techniques and nutritional composition.

---

TechFit is a tool to prioritize and select animal feed interventions. It was developed by ILRI under the leadership of Alan Duncan. It has been further refined and developed with inputs from many individuals in and beyond CGIAR. This is one of a series of feed intervention ‘TechSheets’ developed alongside the TechFit tool to provide summarized information on different interventions included in the tool. Werner Stür led the development of the TechSheets. This sheet was prepared by Ben Lukuyu (ILRI). TechFit is supported by the CGIAR Research Program on Livestock and Fish. ilri.org/techfit
Where does this intervention fit?

### Potential to overcome feed limitations

<table>
<thead>
<tr>
<th></th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feed scarcity during dry season</td>
<td>none</td>
</tr>
<tr>
<td>Feed scarcity during cropping season</td>
<td>none</td>
</tr>
<tr>
<td>Low feed availability</td>
<td>none</td>
</tr>
<tr>
<td>Poor feed quality</td>
<td>very high</td>
</tr>
</tbody>
</table>

### Applicability to livestock

#### Cattle/buffalo
- Breeding (cow-calf): low
- Fattening: n/a*
- Dairy: very high

#### Sheep/goats
- Breeding: low
- Fattening: n/a

#### Pigs
- Breeding (sow-piglets): n/a
- Fattening: n/a

* n/a = not applicable

### Applicability to farming system

- Pastoral (extensive grazing systems): n/a
- Agro-pastoral/extensive mixed systems: n/a
- Intensive mixed crop-livestock system: high
- Landless livestock producers: high

### Requirement for resources

#### Requirement for

<table>
<thead>
<tr>
<th></th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>none</td>
</tr>
<tr>
<td>Water</td>
<td>low</td>
</tr>
<tr>
<td>Labour</td>
<td>medium</td>
</tr>
<tr>
<td>Cash/credit</td>
<td>very high</td>
</tr>
<tr>
<td>Access to inputs</td>
<td>very high</td>
</tr>
<tr>
<td>Knowledge/skills</td>
<td>very high</td>
</tr>
</tbody>
</table>

More information:

- More information on milk replacers can be found at: [http://nahms.aphis.usda.gov](http://nahms.aphis.usda.gov)