ROVIMIX® β-Carotene
The first step towards optimum fertility in dairy cows
Advantages of ROVIMIX® β-Carotene

- Superior product quality
- Outstanding mixability

Dairy cows
- Supports optimum fertility
- Enriches β-Carotene in the colostrum

Calves
- Supports optimum calf health
Problems

- Weak or silent oestrus
- Delayed ovulation
- Low progesterone concentration
- Low fertility index
- Early embryonic losses
- Diarrhoea and pneumonia in calves

Benefits

- Penetrates the follicle
- Improves follicle quality
- Precursor of vitamin A in the follicle
- Mode of action is independent of vitamin A
- Improves fertility rate
- Reduces service interval
- Protects the mucosa

β-Carotene content in forage and blood samples – Survey results –

- Forage has a wide and unpredictable β-Carotene concentration
- Corn silage has a negligible β-Carotene concentration

Most grass silage has a β-Carotene concentration below the level necessary for optimum dairy cow fertility.

The β-Carotene content of grass silage should exceed 200 mg/kg DM to fulfill the β-Carotene requirement of cows in early lactation.

Effect of supplementary ROVIMIX® β-Carotene on pregnancy rate in dairy cows

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Interval from calving to first AI (d)</th>
<th>At first AI 90 d postpartum</th>
<th>120 d postpartum % of cows pregnant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>76.8</td>
<td>9.3</td>
<td>9.4</td>
</tr>
<tr>
<td>b-β-Carotene 400 mg/d for ≥ 90 d</td>
<td>79.4</td>
<td>14.6</td>
<td>12.9</td>
</tr>
</tbody>
</table>

* p < 0.05

Aréchiga et al., 1998; University of Florida
### Economics
Reported field trials

<table>
<thead>
<tr>
<th></th>
<th>β-Carotene mg per head per day</th>
<th>Costs per cow per year €</th>
<th>Return on investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved fertility and calf health</td>
<td>500</td>
<td>30</td>
<td>5 : 1</td>
</tr>
</tbody>
</table>

### Feeding
Recommendations

#### Supplementation Guidelines

<table>
<thead>
<tr>
<th></th>
<th>β-Carotene mg per head per day</th>
<th>ROVIMIX® β-Carotene 10% mg per head per day</th>
<th>When</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dairy cows</td>
<td>300-500</td>
<td>3000-5000</td>
<td>28 days prior to calving until pregnancy is confirmed</td>
</tr>
<tr>
<td>Calves (milk replacer)</td>
<td>100</td>
<td>1000</td>
<td>For the first 3 weeks of milk feeding</td>
</tr>
</tbody>
</table>
Why DSM Nutritional Products?

DSM Nutritional Products is a pioneer in the synthesis and production of vitamins. Today we are the leading supplier of vitamins for both animal and human nutrition. All our products are manufactured under strict control and in modern facilities that exceed the requirements for environmentally safe production.

Our ‘Feed for Food’ focus means that quality, safety and traceability are an important feature of our products. With our innovation programme, we are able to deliver outstanding nutritional solutions to meet customer needs.

Why ROVIMIX® β-Carotene?

Numerous field trials confirm scientific studies that ROVIMIX® β-Carotene supports optimum fertility in dairy cows and benefits calf health. Combined with superior product formulation technology, ROVIMIX® β-Carotene is the product of choice for effective β-Carotene supplementation for all species.