FOR DAIRY COWS & HEIFERS

RUMEN EFFICIENCY THROUGH THE POWER OF PLANT EXTRACTS

First product certified for reducing methane while improving feed efficiency of dairy and beef animals.

– The Carbon Trust.

FeedworksUSA
performance through science
**What is AGOLIN RUMINANT**

AGOLIN RUMINANT is a blend of high quality plant extracts from herbs and spices designed to optimize ruminant feed efficiency.

Many years of research have resulted in a specific blend of powerful components with **significant** benefits to ruminant animals. Trials demonstrate increased milk yield, milk fat and milk protein with improved efficiency as well as better fertility.

AGOLIN RUMINANT is the first product to have received **certification by the Carbon Trust** to reduce methane while improving feed efficiency in dairy and beef animals.

---

**AGOLIN and Rumen Efficiency**

Leading Research institutes have confirmed the following benefits of Agolin:

<table>
<thead>
<tr>
<th>Rumen Changes</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methane reduced by 10% to 30%:</td>
<td>More energy going into milk and body condition</td>
</tr>
<tr>
<td>Ammonia decreased by 10%:</td>
<td>More feed protein used for production, not lost in urine</td>
</tr>
<tr>
<td>Volatile fatty acids increased (propionate, butyrate, acetate):</td>
<td>Increased milk and components (protein and butterfat)</td>
</tr>
<tr>
<td>Increased propionate:acetate ratio:</td>
<td>Better feed efficiency</td>
</tr>
</tbody>
</table>
**Dairy Performance**
Many Research institute and field trials around the World confirm the benefits of AGOLIN RUMINANT. Over 1 million cows are already using Agolin – and this is growing rapidly.

**University of California, Davis**
A Research trial on a 4,800 cow dairy in the California Central Valley produced an increase in 3.5% fat corrected milk and a feed efficiency benefit worth about $15 for each $1 cost of Agolin* (figure 1). Extensive field trials in California have shown 2 lb to 6 lb additional energy corrected milk.

![Figure 1: University of California Davis](image)

**IRTA – Spanish Research Institute**
Trials from this renown Research facility (Blanca) have confirmed significant improvements in milk, ECM and feed efficiency, with reduced enteric methane. Diets were similar to those in the USA.

**After adaptation.**
Energy corrected milk on Agolin cows was 76.3 lbs compared to 71.6 lbs for cows without Agolin – a 6.6% increase.

**After adaptation.**
Feed efficiency on Agolin cows was 1.48 compared to 1.37 for cows without Agolin – an 8% improvement.

**After adaptation.**
Methane concentration was 2 mmol for Agolin cows compared to 2.34 mmol for cows without Agolin. Represents 14.5% lower enteric methane.
Field Trials – USA

A series of trials in California compared 14,000 cows on 7 dairy units with about 40,000 cows as control. Responses were very consistent as follows:

- Average increase in peak milk = 2 to 6 lbs milk
- SNF per cent increased by 0.1
- Butterfat percent increased by 0.05
- Feed efficiency (lbs milk per lb feed) increased by about 4%
- Conception to first service improved on most herds (see figure 2)

Conception to first service increased, especially in summer, compared to a cooler summer the previous year.

Figure 2: California Large Scale Trials
Conception Rate %
2013 = Control 2014 = Agolin

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>1st Service</td>
<td>30</td>
<td>35</td>
</tr>
<tr>
<td>August</td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>2nd Service</td>
<td>20</td>
<td>30</td>
</tr>
</tbody>
</table>

Agolin Ruminant is available in powder or liquid (water dispersible) forms.

An organic form (Agolin Naturu) is also available.

Agolin Products are equally beneficial for beef and calves.

Poultry and Pig versions are available.

For further information contact Feedworks USA Ltd.
Tel: 800-533-6872
www.feedworksusa.com

AGOLIN BENEFIT SUMMARY*:

- Optimal feed intake – Agolin is very palatable
- Milk yield and components increased
- Feed efficiency increased
- Return on cost typically 10 to 1 or better!
- Environmental benefits (reduced methane and nitrates)

*Summary of research institute trials