Hemicell®

THE ENERGY-SPARING ENZYME

- A unique and patented feed enzyme for soybean meal diets
- Minimizes effects of the Feed-Induced Immune Response (FIIR)
- Spares energy to support performance in layers
Wasting energy? That’s a problem.

Soybean meal remains an industry standard for supplying protein and energy to layers. But soybean meal contains a “problem component:” β-mannans (beta-galactomannans).

β-mannans are a problem because the bird’s innate immune system perceives β-mannans as an invading pathogen. This triggers an unnecessary innate immune system response. Even small amounts of β-mannans trigger this response. Layer diets often contain 20% or more soybean meal.

Because components in feed trigger this response, it is sometimes referred to as a Feed-Induced Immune Response (FIIR). This unnecessary Feed-Induced Immune Response consumes valuable energy. That means some of the energy in expensive feed goes to waste — it doesn’t go to bird performance. That’s a problem.

Sparing energy: That’s the solution.

All non-starch polysaccharide (NSP) enzymes affect energy in the animal. But there are two distinct categories: energy-sparing enzymes and energy-releasing enzymes. They target different components in feed, leading to different outcomes.

Hemicell is an energy-sparing enzyme. It works by breaking down β-mannans in soybean meal. Once broken down, this new product does not trigger the innate immune response. By breaking down β-mannans and avoiding the innate immune response, Hemicell helps spare valuable energy, making it available for performance.

Reduce the innate immune system response

Hemicell’s effect also can be gauged with an acute phase protein referred to as AGP, which gives an indication of innate immune system activation. Lower AGP levels with Hemicell provide evidence of Hemicell’s ability to reduce excessive stimulation of the innate immune system response (see chart).

Maintain similar performance with less dietary energy

Sparing energy by adding Hemicell to the diet makes it possible to reduce dietary energy by 40 kcals/lb. (and lower costs) while maintaining similar performance.
Hemicell performance data in layers

By breaking down β-mannans in soybean meal, Hemicell helps spare valuable energy, making it available for performance in layers.

**Egg production (%) 18-66 weeks**

<table>
<thead>
<tr>
<th>Age (weeks)</th>
<th>Without Hemicell</th>
<th>With Hemicell</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-30</td>
<td>70.75</td>
<td>70.86</td>
</tr>
<tr>
<td>31-42</td>
<td>86.21</td>
<td>86.91*</td>
</tr>
<tr>
<td>43-54</td>
<td>79.23*</td>
<td>90.30*</td>
</tr>
<tr>
<td>55-66</td>
<td>74.00*</td>
<td>75.50*</td>
</tr>
</tbody>
</table>

In a 1999 study of 6,144 Hy-Line birds, egg production after 30 weeks was compared in Hemicell and non-Hemicell diets.

**Egg production**

In a 2005 pen study with Hy-Line W36 birds, egg production was compared between negative and positive control diets vs. Hemicell.

**Feed efficiency**

<table>
<thead>
<tr>
<th></th>
<th>No Hemicell</th>
<th>Hemicell</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.146*</td>
<td>2.095*</td>
</tr>
</tbody>
</table>

In a 2011 study, feed efficiency was compared between Hemicell and non-Hemicell diets.

**Feed efficiency**

In a 2005 pen study with Hy-Line W36 birds from 98-110 weeks, feed efficiency was compared between negative and positive control diets vs. Hemicell.

**Egg weight (g) 18-30 weeks**

<table>
<thead>
<tr>
<th></th>
<th>Low ME</th>
<th>High ME</th>
<th>Without Hemicell</th>
<th>With Hemicell</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>51.34</td>
<td>51.70</td>
<td>51.36</td>
<td>51.68</td>
</tr>
</tbody>
</table>

A 1999 study with 6,144 Hy-Line birds compared the difference in egg weight between diets with or without Hemicell to low energy and high energy diets.

**% Grade A eggs**

A 2011 study compared the percentages of Grade A eggs in Hemicell and non-Hemicell diets.
Hemicell use recommendations

Hemicell is a unique, patented enzyme produced by fermentation of *Bacillus licheniformis* bacteria. The active ingredient is *Endo-1,4-β-D-mannanase*.

**Species:** Layers, Broilers, Turkeys

**When:** Use Hemicell in diets containing 12% SBM or higher.

**Recommended dosage:**

<table>
<thead>
<tr>
<th>Product (form)</th>
<th>Dosage per ton of complete feed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hemicell (liquid)</td>
<td>100 ml enzyme with 0.90 L water</td>
</tr>
<tr>
<td>Hemicell HT (dry)</td>
<td>.40 - .80 lbs/ton</td>
</tr>
<tr>
<td>Hemicell HT (liquid)</td>
<td>50 - 100 ml enzyme</td>
</tr>
</tbody>
</table>

**Energy reduction (for high-energy diets):**

Improved performance allows for a reduction of dietary energy up to 40 kca/lb.

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The label contains complete use information, including cautions and warnings. Always read, understand and follow the label and use directions.

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