Al⁺Clear® Dry

Improve Bird Health & Performance
The original Al⁺Clear® product developed in 1997

The Litter Amendment of Choice: Al⁺Clear® Dry is preferred for use on wet litter associated with short down times, extended grow-outs, water management issues and wet seasonal weather conditions.

Reduced Water Activity: Al⁺Clear® Dry binds water, reducing water activity (Aw) better than other litter acidifiers and salt.

Effective in Combination Programs: Al⁺Clear® Dry can be used effectively in combination programs with Sodium Bisulfate and Acidified Clay, providing good early activation along with excellent extended ammonia control.

Easy Application: Al⁺Clear® Dry can either be self-applied or applied by a Chemtrade custom applicator.

Simple Ingredients: Al⁺Clear® Dry does not contain sodium like sodium bisulfate and is the product of choice where litter is applied to pastures.

Available Nationwide: Al⁺Clear® Dry is available at convenient locations throughout the United States through a network of animal health distributors, cooperatives, farm stores, and custom applicators.

How Al⁺Clear® Dry Works

Al⁺Clear® Dry is a dry Lewis acid that reduces pH (neutralizes alkalinity) and converts ammonia (NH₃) to ammonium (NH₄⁺). Reducing ammonia levels in broiler houses improves bird health and performance. The hydrolysis of aluminum sulfate results in controlled generation of acid (pH 3.5) through a series of buffered chemical reactions.

Al⁺Clear® effectively binds phosphorus, qualifying it for both air and water EQIP standards. Al⁺Clear® reduces water activity (Aw) of litter by chemically binding available water during the acid formation process. (Table 2). Each molecule of Al⁺Clear® generates six acid ions (H⁺) compared to only one acid ion (H⁺) provided by sodium based salts (sodium acid sulfate, sodium bisulfate). Al⁺Clear® Dry provides the highest level of acid ion (H⁺) generation in the industry compared to all other approved litter amendments.
Al\textsuperscript{+}Clear\textsuperscript{®} Dry

Al\textsuperscript{+}Clear\textsuperscript{®} Dry Best Management Practices

Pre Al\textsuperscript{+}Clear\textsuperscript{®} Dry Application

- Close house as soon as birds are removed from the house – retaining litter temperature is important for ammonia release
- Run minimum ventilation while out of birds to control ammonia being released and moisture buildup
- Litter should be managed per integrator guidelines (de-caking, windrowing) within 48 hours of bird removal
  - Overworking litter will negatively impact the performance of Al\textsuperscript{+}Clear\textsuperscript{®} (pulverizing)
- Litter should be undisturbed three days prior to Al\textsuperscript{+}Clear\textsuperscript{®} application
- Schedule Al\textsuperscript{+}Clear\textsuperscript{®} to be applied 3-5 days prior to placement
  - If floors are excessively dry 5-7 days prior is recommended
  - Windrowed houses require additional product - increase rate by 25%
- Equipment (feed and water), hoses, cords, sensors and feed drop tubes should be raised for application
  - Product can be applied over top equipment as long as equipment is not wet
- Purge house of ammonia prior to application with house lights on and doors open for applicator

Post Al\textsuperscript{+}Clear\textsuperscript{®} Dry Application

- Close house up and set fans to run on minimum ventilation
  - If floors were damp/wet additional ventilation is required (continuous – weather permitting)
  - When ventilating – pull air away from your brood chamber (don’t pull untreated air to treated area)
- Set up for chick placement and preheat house per integrator guidelines
  - Litter will release ammonia during the preheat process – increase fan time to clear the air as needed
- Minimum ventilation must be run during preheat – even if there is no ammonia

<table>
<thead>
<tr>
<th>Product</th>
<th>Range for Different Litter Conditions</th>
<th>EQIP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low Challenge*</td>
<td>High Challenge*</td>
</tr>
<tr>
<td></td>
<td>Summer</td>
<td>Winter</td>
</tr>
<tr>
<td>Al\textsuperscript{+}Clear\textsuperscript{®} Dry: lbs</td>
<td>75</td>
<td>100</td>
</tr>
</tbody>
</table>

Low Challenge\* = Normal summer conditions; low disease challenge; < 6 lb. bird

High Challenge\* = Winter conditions; high disease challenge; > 6 lb. bird

Add 25 pounds per 1000 ft\textsuperscript{2} when windrowing or disease challenges are present

<table>
<thead>
<tr>
<th>Amendment</th>
<th>Water Binding/100 lbs. of Product\textsuperscript{1}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al\textsuperscript{+}Clear\textsuperscript{®} Dry</td>
<td>Binds 12 lbs. of water</td>
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</table>

\textsuperscript{1} General Chemical. 2008. Wet floors affect performance of all litter amendments

<table>
<thead>
<tr>
<th>Amendment</th>
<th>pH @ Placement</th>
<th>pH: 3 d</th>
<th>pH: 7 d</th>
<th>pH: 14 d</th>
<th>pH: 21 d</th>
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</thead>
<tbody>
<tr>
<td>Al\textsuperscript{+}Clear\textsuperscript{®} Dry</td>
<td>3.7</td>
<td>4.2</td>
<td>4.3</td>
<td>6.5</td>
<td>7.4</td>
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<tr>
<td>Acidified Clay</td>
<td>3.9</td>
<td>5.4</td>
<td>5.5</td>
<td>6.7</td>
<td>7.5</td>
</tr>
<tr>
<td>Sodium Bisulfate</td>
<td>3.2</td>
<td>6.2</td>
<td>6.6</td>
<td>6.6</td>
<td>7.7</td>
</tr>
</tbody>
</table>

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