What it is:
Oral drench for cattle
Developed for cattle that are subject to stressful conditions
• Birth
• Weaning
• Receiving
• Injury/Illness/Rehabilitation
• Transportation
• Vaccination
• Breeding (including AI)
• Calving
Stress

• “Stress suppresses the primary defense mechanism against pathogens and increases susceptibility to bacterial, viral, or parasitic infections. An animal’s natural response to health challenges reduces performance and productivity.” ~ Dr. Klaus Hoffmann, Chemoforma Ltd

• Animals are often in a compromised, stressful situation caused by illness, injury, breeding, or other physical challenges. These situations can have a negative impact on health, performance, and profitability.
Weaning/Receiving Stress

- Calves may have limited access to feed and water prior to receiving
  - Feed is often of low quality
- During the first two weeks, intakes are low
- Periods of inadequate nutrition in combination with:
  - Weaning/receiving/hauling/processing, etc. can cause increased disease risk and poor performance
- During transit stress, the rate of passage of water and nutrients may increase
- Feed and water deprivation can cause rumen fermentation activity to decline which leads to depressed intakes.

What’s in it?

AO458
Enzymes/Digestibility

Cell-Rate

Nucleotides/Stress
Zinc
Copper
Vit. E
Vit. A

Vitamins/Minerals/Health

Electrolytes
Hydration
Enzymes

- *Aspergillus oryzae* (AO) is classified as a fungi
- Helps support performance and maintain gut function/health
- Studies show AO has a positive effect on total VFA (propionate and acetate) concentrations in the rumen
- Studies show that cellulolytic bacterial counts tend to be higher in calves fed AO

Aspergillus

• **Aspergillus oryzae**

  - **Take home ruminal effects***
    1. Increase total viable ruminal bacteria numbers
    2. Increase the rate of fiber digestibility

• **Product used in Cellarator® Turbo Drench: AO458-M™**

  - A proprietary blend of enzymes derived from microbial fermentation products; designed to support a healthy rumen and hind-gut environment and fiber and starch digestibility


**Not a trademark of ADM.**
Nucleotides

- Building blocks of RNA and DNA.
- Cell division is the basis of life as it allows for continual growth and repair of body cells.
- Since cells have a limited life span, they can only replicate so many times before dying.
- DNA and RNA are required for cell division. DNA and RNA are the only biological substances that carry the potential for self-duplication.
Nucleotides represent tremendous potential to enhance the profitability of livestock operations in a way that is an excellent fit with today’s industry and regulatory environments,” Jones said.

“The science has come a long way. We have a much better understanding of what nucleotides can do for livestock. That knowledge has supported innovation in feed product development. Nucleotides give the livestock sector another tool in the toolbox at a time when we need more options to meet the changing demand of the marketplace.”
Nucleotides
The sky high view

• Cell division is the basis of life. In order for cells to divide in the body, nucleotides are needed.

• Cell Rate® provides nucleotides. The more nucleotides the body has, the more cells the animal’s body can produce and has available to deal with sickness, injury, performance, reproduction, and stress.

• Cellarator® Tub Drench contains a high level of Cell Rate nucleotides.
Mineral & Vitamin Boost

• In order for cattle to achieve their genetic potential, the proper balance of water, energy, protein, vitamins and minerals are needed.

• Sometimes forage-based diets can be deficient in minerals and vitamin A.

• If intake is low, concentrations of minerals and vitamins must be increased in receiving diets.
Mineral & Vitamin Boost

• Deficiencies of copper, zinc, vitamins A or E may depress immune function

• Providing an oral “booster” of these minerals and vitamins helps provide these crucial nutrients as weaned calves are transitioning to a new feedlot environment

• Cellarator Turbo Drench contains copper, zinc, and vitamins A and E.
Electrolytes

• Adequate feed and water are essential for maintenance of homeostasis
  ➢ Cardiorespiratory patterns, body temperature and serum electrolytes are associated with this balance

• Oral rehydration solutions help replenish fluids and electrolytes lost

• Sodium and potassium chloride help maintain pH of the blood, muscle contractions, and electrolyte balance

• Providing an electrolyte solution to calves may help deter dehydration

Kehoe and Heinrichs, Coop. Ext. PennState; Feedlot Management Primer, Ohio State University Extension
Field Demo

• 135 head of Holstein calves were split into two groups:
  ➢ Group 1: Treatment received 5 cc of Cellarator Turbo Drench upon arrival
  ➢ Group 2: Control (no Drench)

• Calves were weighed upon arrival and prior to shipping to background operation

• Milk consumption and feed intakes were measured daily
Cellarator Turbo Drench effect on weight gain in young Holstein calves upon arrival at enclosed facility

<table>
<thead>
<tr>
<th>Variable</th>
<th>Treatment¹</th>
<th>Control</th>
<th>SE</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrival wt, lb</td>
<td>83.82</td>
<td>86.25</td>
<td>0.83</td>
<td>0.04</td>
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<tr>
<td>Milk consumption, lb²</td>
<td>79.31</td>
<td>79.33</td>
<td>1.81</td>
<td>0.99</td>
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<tr>
<td>Feed intake, lb</td>
<td>2.24</td>
<td>2.2</td>
<td>0.25</td>
<td>0.91</td>
</tr>
<tr>
<td>End wt., lb</td>
<td>154.97</td>
<td>151.14</td>
<td>1.27</td>
<td>0.03</td>
</tr>
</tbody>
</table>

¹Treatment calves received 5 cc of Cellarator Turbo Drench upon arrival at the facility. All calves were ran through chute and weighed. N=136

²Total daily milk delivered to total group of calves.

Field demo summary:
Cellarator Turbo Drench treated calves had significantly greater end weights and lower number of sick calves.

Cellarator Turbo Drench effect on health of young Holstein calves upon arrival at enclosed facility

<table>
<thead>
<tr>
<th>Variable</th>
<th>Treatment¹</th>
<th>Control</th>
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</thead>
<tbody>
<tr>
<td>Morbidity, %</td>
<td>5.88</td>
<td>11.76</td>
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<tr>
<td>Mortality, %</td>
<td>0.00</td>
<td>4.41</td>
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</tbody>
</table>

¹Treatment calves received 5 cc of Cellarator Turbo Drench upon arrival at the facility. All calves were ran through chute and weighed. N=136
Advantages of Optimal Health

- Strong immune system to better withstand effects of stress
- Good gut health facilitates growth performance
- Calves with good health will have better feed consumption and ultimately, better performance with less treatment cost
Customers speak
Customers speak
Carlos Flores of Jerome, Idaho, raises over 4,000 weaned calves and states that Cellarator Turbo Drench gets his calves “better faster.” When using Cellarator Turbo Drench only two calves were lost compared to 10 calves over a same time period. Flores noted since using Cellarator Turbo Drench death loss has been reduced significantly (by 80%) and for his operation it only takes one extra live calf to pay for one case of Cellarator Turbo Drench. According to Flores, “I’ve never had anything work this good before. The calves just get better faster.”

“We have noticed a significant difference in not only the number of embryos produced but also **the quality of grade of embryos has improved.** In our business that is the most important factor. **We have also used this product on our show steers and noticed improved consistency on feed intake and weight gain.”** Dustin Glover
Product Specs

- #8263AAAJE: Liquid, one-gallon jug
- Usage: 5 cc/100 lb of body weight orally administered with drench gun (#071511 drench gun sold separately)
- Available on AN shopping cart: [http://shop.admanimalnutrition.com](http://shop.admanimalnutrition.com)
- For use with cattle only
<table>
<thead>
<tr>
<th>Weight, lb</th>
<th>CC Dose/Head</th>
<th>Doses/Gal (# head treated)</th>
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<tbody>
<tr>
<td>300</td>
<td>15</td>
<td>252</td>
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<tr>
<td>400</td>
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<td>1200</td>
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*Based on 5 cc/100 lb of body weight.
*Approximately 3,785 cc/gal.