Redefining hydration to keep animals drinking, eating & producing.
You know us by our brands

- 75% of our products are hydration based
- Products for dairy, swine, beef, poultry, canine, equine etc.
Company background

- 1983 – Launch of TechMix by Dr. Peter Franz, D.V.M. and Marty Nelson

- Swine BlueLite® – TechMix’s first product
  - Ahead of his time, Dr. Franz developed the first hydration product that combined electrolytes, amino acids, and essential trace elements for animals

- Today, TechMix products are sold in more than 40 countries
Building on human life science

- Athletes use water and electrolytes to maintain hydration and enhance their performance under stress

“BlueLite® is Gatorade® for animals”
1983 Peter Franz, D.V.M.

- Animals don’t drink enough during stress events
- Animals don’t consume enough of the critical nutrients needed at critical times

*Water is the single largest dietary input – above dry matter intake*
Water is a nutrient

- Water is defined as an essential nutrient because it is required in amounts that exceed the body’s ability to produce it.
- All biochemical reactions occur in water.
- Water losses from lungs and skin (insensible losses) are responsible for 50% of the total water turnover.
- Dehydration of as little as 2% loss of body weight results in impaired physiological responses and performance.
Water is a nutrient

- Water is the single largest dietary input for livestock and poultry
- Efficient livestock & poultry production depends on efficient hydration…and especially through periods of stress when animals do not consume enough critical nutrients, including water
Key ways that we are Redefining Hydration

- Supporting and enhancing the biological function of water (making water work harder and more effectively)
- Formulating products that help with water absorption
- Enriching water with nutrients that support specific biological systems
- Making water more palatable and appealing to encourage intake
- Designing products and delivery forms that promote water and nutrient accessibility for the animal, producer, and veterinarian

- Soluble powders
- Capsules & boluses
- Pastes & gels
- Pellets
- Liquids
- Nutrient Dense Liquids
- Lick Tubs
Working with industry experts

Lance Baumgard
Iowa State University Professor of Animal Science, Norman L. Jacobson Endowed Professor in Dairy Nutrition
- Supervised BlueLite® trial work
- Dairy heat stress expert
ALL the nutrients your fresh cow needs in ONE product
Composition

- A complete fresh cow supplement featuring yeast, magnesium, calcium, potassium, and niacin to ease the transition into lactation.

- Intended to provide essential rehydration and nutrients for the cow right after calving

MORE than just CALCIUM
Benefits

Reduced metabolic problems associated with calving
• **YMCP provides KEY nutrients at a very critical moment**

Improved milk production
• **Helps cows recover faster, with better rumen function & appetite**
KEY POINT: Cows will only drink YMCP within 30 minutes after calving
More than 30 years of optimizing livestock hydration health

BlueLite® products and programs provide year-round hydration enrichment during stress events.
Composition

- An easy-to-administer, palatable and buffered source of electrolytes, energy sources, betaine and vitamins

- Intended to recover from dehydration and help restore cow health for reproduction, milk production and helping prevent metabolic issues during stressful events and freshening
Benefits

- Ensuring hydration to maintain milk production, and encourage dry matter and water intake during stressful events like heat stress or freshening.
Heat & Cold Stress  Transition and high production cows  Winter Diarrhea
1 kg/500L water

60 g/cow/day

100-120 g/cow/day
• 20 kg plastic pail

Consumption rate – 130-150 g/day
Now in 3 convenient formats

<table>
<thead>
<tr>
<th>Format</th>
<th>How to apply</th>
<th>Dose rate/hd/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>BlueLite Powder</td>
<td>Soluble; mix in water</td>
<td>60 g</td>
</tr>
<tr>
<td>BlueLite Pellets</td>
<td>Pellets; top dress or mix in TMR</td>
<td>130-170 g</td>
</tr>
<tr>
<td>BlueLite Lick Block</td>
<td>Lick block; direct, place in pen or pasture area</td>
<td>150 g</td>
</tr>
</tbody>
</table>
A source of probiotics for dairy cows in an easy-to-use bolus form
Composition

- A concentrated form of DFM (direct-fed microbials) and niacin in bolus form to speed digestive restoration and help encourage feed intake.
- Intended to restore beneficial bacteria in the rumen and encourage dry matter intake any time that normal digestive health has been interrupted.
Benefits

- Restores normal digestive health any time that dry matter intake drops
- Helps to repopulate, enhance and activate the rumen and intestinal microflora of cattle.

**Rumination (minutes per day)**

![Graph showing rumination minutes per day for a healthy cow and other conditions]

- Consumption of sugars: competition with lactate producing bacteria
- Oxygen scavenging
- Stabilization of ruminal function (bacteria, protozoa, fungi)
- Raizes and stabilizes pH
- Limits risk of acidosis
- Decreased rumen lactic acid: stimulation of lactate consuming bacteria
- Increases fibre degradation

**Improvements**

- IMPROVE MILK YIELD
- BEST ENERGY BALANCE
- IMPROVE REPRODUCTIVE EFFICIENCY
20 grams bolus

Any moment when the cow is either off fed, depressed or stressed.

1-2 BOLUS EVERY 12/24 HOURS, MAX 3 BOLUSES

Ruminal activation that leads to an appetite improvement and overcoming of individual stress periods.
A source of probiotics, vitamins and minerals for dairy cows
Composition

- A concentrated form of live naturally occurring microorganism that can be added to TMR, concentrates, grain mixes or top-dressed.

- Intended to restore and stimulate rumen microflora and improve feed conversion and ruminal pH any time that normal digestive health has been challenged.
Benefits

- Restores normal digestive health any time that dry matter intake drops
- Helps to repopulate, enhance and activate the rumen and intestinal microflora of cattle in pre-fresh, fresh or lactating diets.
Application

- **Transition Groups** - 14 days before calving to 14 days post-calving;
  
  2 kg/100 head daily (20 g/head/day)

- **Group Feeding or Complete Lactation**
  
  1 kg/100 head daily (10 g/head/day)
Calf Program
When can we best influence a cow milk production?

- Development of mammary gland.
  - Direct effect of nutrient intake with parenchymal proliferation in the first months of life
  - Calves that received more nutrients pre-weaning produced more milk during their first lactation. (Soberon and Van Amburgh, 2013).

- Feed efficiency

- Metabolic and hormonal regulation

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Effects of early life management and nutrition accounted for 22% of the variation in milk production.

Early life nutrition was responsible for 4 to 8 times the effect on milk production that could be expected by genetic selection.

Conclusions

✓ **First hours and weeks** of a calf’s life are a prime time to influence life-time performance.

✓ **Colostrum** is an important source of IgG (passive immunity) and many growth factors that are beneficial for the life performance of calves.

✓ **Nutrient intake** from milk/milk replacer and solid feed has a positive influence on milk yield later in life.

✓ **Prevent any health issue** during this period to avoid slowdown in calf growth.

✓ **There are no compensatory mechanisms** for these effects; if this window of opportunity is missed, the chances to optimize her performance are gone.
# TechMix International Calf Program

<table>
<thead>
<tr>
<th>Product</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calf Renova</td>
<td>Stop diarrhea; digestive recovery</td>
</tr>
<tr>
<td>BlueLite® Replenish</td>
<td>Immediate hydration therapy</td>
</tr>
<tr>
<td>Calf PreRD</td>
<td>Probiotic; promotes faster rumen development, feed efficiency and superior weight gain</td>
</tr>
</tbody>
</table>
A natural solution to enhance CALVES PERFORMANCE
Composition

- A supplement containing a source of live, viable probiotics (DFMs), antioxidants and vitamins for pre-ruminant calves

- Specifically designed to aid in the development of the rumen; to establish dry feed intake at an earlier age to help improve weaning weight and reduce digestive health issues.
Benefits

- Live bacteria in Calf PreRD help to maintain a more desirable digestive environment, starve off pathogens and aid in nutrient utilization.

- Promotes faster rumen development and encourages starter intakes, which allow calves to gain weight more quickly and wean earlier if desired.

US trial

<table>
<thead>
<tr>
<th>Effect of Calf PreRD on ADG and GAIN (27 supplemented &amp; 20 un-supplemented calves)</th>
<th>Un-supplemented</th>
<th>Calf PreRD</th>
<th>Calf PreRD Advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>In weight</td>
<td>103.30</td>
<td>102.59</td>
<td>-0.71</td>
</tr>
<tr>
<td>Out weight</td>
<td>162.85</td>
<td>166.56</td>
<td>3.71</td>
</tr>
<tr>
<td>ADG</td>
<td>0.94</td>
<td>1.04</td>
<td>0.09</td>
</tr>
<tr>
<td>Average days</td>
<td>64.20</td>
<td>62.19</td>
<td>-2.01</td>
</tr>
<tr>
<td>No. calves</td>
<td>20</td>
<td>27</td>
<td>7</td>
</tr>
</tbody>
</table>

Table 2 - Standardized Data Set:

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<tr>
<th>Effect of Calf PreRD on ADG and GAIN (27 supplemented &amp; 20 un-supplemented calves)</th>
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</thead>
<tbody>
<tr>
<td>In weight</td>
<td>102.89</td>
<td>102.89</td>
<td>0.00</td>
</tr>
<tr>
<td>Out weight</td>
<td>162.21</td>
<td>168.16</td>
<td>5.95</td>
</tr>
<tr>
<td>ADG</td>
<td>0.94</td>
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Europe trial

Total Average Daily Gain (61 days)

- Control: 0.564 Kg/day
- Calf RD: 0.616 Kg/day

+52g/day
Calf preRD is designed to be mixed with milk, milk replacer or rehydration products.

- Feed Calf preRD from the 2nd day old till weaning: 2 g per feeding (4 g per calf/day)

- For large volume feeding, mix 200 g of Calf preRD with 200 liters of milk or milk replacer in each feeding (assumes feeding 2 l/head, 2 times/day).
Use at **EARLY** signs of scours and reduce need for antibiotics.
Composition

- An easy-to-use capsule containing a source of natural ingredients including botanical extract, naturally occurring microorganisms, and yeast fermentation products

- Intended to help clean the calf’s gut, restore beneficial bacteria at the first sign of digestive disturbances
Benefits

- Calf Renova provides intestinal support and a natural antimicrobial effect for scouring calves and can reduce the need for antibiotics.
- Enhances immune response, promotes intestinal integrity and supports feed intake of sick calves.
Scours!
✓ Administer **ONE** Calf Renova capsule for incoming calves or during periods of scours (diarrhea). **If necessary, repeat 24 hours later.**

✓ In case of risk of scours, give one capsule 3 days of age, and/or 2 weeks later.
Therapy for sick calves

• Mix 100 ml of Replenish with 2 liters of water to the scouring calf

• Uses:
  • Scouring calves- Recommended for use during all stages of scours
  • Calves slow to drink milk
  • Signs of weakness and stress
  • Multiple rehydration uses
Background information

• Calf scours – major problem for calf raisers
• National Animal Health Monitoring Survey (NAHMS) – latest dairy study
  ➢ 60% of all mortality in calves less than 2 months of age due to scours.
• 20-25% of all heifers get an electrolyte within their first 21 days
5 Goals in Treating Calves for Diarrhea

1. Correcting **acidosis** and restoring blood pH to normal
2. Correcting **dehydration**
3. Correcting **electrolyte abnormalities**
   • (sodium, potassium and chloride)
4. Reversing **negative energy balance**
5. Preventing **growth of bacteria**
   • E. Coli and Salmonella in the intestinal tract
Why BlueLite® Replenish?

• Meets Dr. Geof Smith’s (NCSU) recommendations for an electrolyte
• Contains 3 recommended alkalinizing agents – Sodium Acetate (Better than Sodium Bicarbonate)
  • Facilitates sodium absorption
  • Produces energy
  • Doesn’t increase abomasal pH
• Low abomasal pH decreases the incidence of infection and clinical disease
Features & Benefits

- Liquid buffered calf electrolyte
- Unique formulation
- Shelf Stable
- No mixing needed
- Ease of administration
- Reduces labor
Calf Scours Protocol

- At first signs of diarrhea
- 1 capsule
- If necessary, repeat 24 hours later.

- Repopulates microflora
- Follow up with 8g for 4 days
- Then continue with 4g until weaning

Hydration therapy
- 100ml in 2L of water

TechMix
Redefining Hydration
developing & producing.
We are TechMix. Hydration is in our DNA.

- We believe that during stress events, animals don’t drink enough water – leading to dehydration – and don’t consume enough critical nutrients.

- We believe hydration innovation is a critical component to your success.