

### BulletProof Verses Other Forage Treatment Options

	BULLETPROOF™	BACTERIAL INOCULANTS	ORGANIC ACIDS
<b>Mode of Action</b>	<p><b>Sequester Free Oxygen for Faster Start of Fermentation</b></p> <ul style="list-style-type: none"> <li>*inhibit yeast growth</li> <li>*reduces heating</li> <li>*lowers forage pH indirectly</li> </ul> <p><b>Enhances Fermentation</b></p> <ul style="list-style-type: none"> <li>*inhibits spoilage organisms</li> <li>*increases available sugars</li> </ul>	<p><b>Increase Bacterial Population</b> in forage mass for increased acid production during <b>anaerobic</b> fermentation</p> <ul style="list-style-type: none"> <li>-Lactic acid production</li> <li>-Acetic acid production</li> </ul>	<p><b>Inhibit Yeast and Mold Growth</b></p> <ul style="list-style-type: none"> <li>*direct contact</li> </ul> <p><b>Artificially Lower pH</b></p> <p><b>EPA regulated</b></p>
<b>Time Line of Activity</b>	<p>Begins working <b>on contact</b> with forage</p> <p>Silages and hay stay cooler due to oxygen elimination Faster and more complete fermentation due to increased sugar availability</p>	<p>Begins working <b>AFTER</b> oxygen is eliminated from forage</p> <p>May take 2 weeks to stop mold growth Multi-strain products have extended fermentation patterns that may take several months to complete</p>	<p>Begins working on contact with forage</p> <p>Most applicable to hay treatment due to high application rate</p>
<b>Application Rates</b>	<p>Silage ½ to 2 lbs/ton Hay 2-3 lbs/ton Wet Grains 2-4 lbs/ton</p>	<p>Varies by product and forage type</p>	<p>4-10 lbs/ton on silage 6-14 lbs/ton for hay</p>
<b>Conditions needed to work correctly</b>	<p><b>Ready to Use</b> <b>Liquid or Dry Version</b></p> <p>Apply correct rate for forage and moisture conditions</p> <p>Store liquid product above 32°</p> <p>Shelf life: 2 years with proper storage</p>	<p><b>Bacteria must be ALIVE</b> <b>Most products must be mixed with water soon after opening</b></p> <p>Store sealed package in cool dry conditions.</p> <p>Mix only with non-chlorinated water not more than 24 hr prior to use Do not expose mixed solution to ultra violet light</p>	<p>Ready to Use</p> <p>High application rate needed to get direct contact with spoilage organisms</p> <p>Store above 32°</p>
<b>Affective Moisture Range</b>	<p>30% to 70% for silages</p> <p>Up to 25% for hay</p> <p>20% to 35% for grain</p>	<p>55% to 65% for silages</p> <p>Not designed for hay</p> <p>Inconsistent data on high moisture grains</p>	<p>30% to 70% for silages</p> <p>Up to 25% for hay</p> <p>20% to 35% for grain</p>
<b>Equipment Considerations</b>	<p>Works with most liquid or dry application systems Lower volume needed</p>	<p>May require using manufacturer approved applicator system</p>	<p>Corrosive</p> <p>High Application Rate</p>