ProSile

Crop Cure

Feed Your Forages with Confidence.

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Why should you treat your Forages?

The natural microbial populations that exist on fresh forage exert a tremendous influence on the fermentation, stability, and quality of ensiled feed. The purpose of an inoculant is to influence and direct fermentation to a desired outcome. Microbial inoculants will improve silage fermentation and animal performance; while reducing waste, shrink, and spoilage.

Profitability Begins at the Feed Bunk

Quality forages play an important role in maintaining and enhancing the overall health of livestock. High quality feed has a direct effect on the production capacity and profitability of your farm. Feed cost is also one of the biggest expenses on many operations. It is important to protect your investment by caring for your home-grown forages through proper forage management, and by applying a quality inoculant or forage preservative.

ProSile

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What is Pro Sile™?

Pro Sile is a forage inoculant formulated for all silages and high moisture ensiled corn.

- Improved fiber digestibility
- Fast efficient fermentation
  - Faster pH decline
  - Improved dry matter retention
  - Higher lactic acid production
  - Lower nutrient degradation

Enzyme Package
Pro Sile Advanced inoculants feature our unique enzyme package proven to provide an energy source for bacteria and improve fiber and starch digestibility.

Proven Bacteria Strains
Contains multiple strains of bacteria proven to be effective throughout all stages of fermentation.

Pro Sile Forage Inoculant Options

Pro Sile Advanced CS
- Use for:
  - Corn Silage, Sorghum Silage
- Features enzyme package

Pro Sile Advanced ASB
- Use for:
  - HMC, Earlage, Snaplage
  - Can also be used on silages when aerobic stability is a challenge.
- Features enzyme package

Pro Sile Advanced AG
- Use for:
  - Alfalfa Silage, Grass Silage, Small Grain Silage
- Features enzyme package

Pro Sile AP
- Use for:
  - All types of high moisture forages

Innovative Solutions for Every Forage

Each type of forage and storage situation requires a unique solution for their common forage issues.

	Storage Type				
	Bunker/Pile	Upright Silo	Bag	Balage	
Feed Type	**Whole Plant Moisture**				**Forage Additive**
Alfalfa Silage	65-70	62-67	62-67	NA	Optimal Storage Conditions:* Pro Sile™ Advanced AG (pg 13-14) Pro Sile AP (pg 18) Sub-optimal Storage Conditions: Crop Cure® (pg 19-22) Pro Sile Advanced ASB (pg 16-17)
Grass Silage	55-70	55-65	55-67	50-65	Optimal Storage Conditions:* Pro Sile Advanced AG (pg 13-14) Pro Sile AP (pg 18) Sub-optimal Storage Conditions: Crop Cure (pg 19-22) Pro Sile Advanced ASB (pg 16-17)
Small Grain Silage	55-70	55-65	55-67	50-65	Optimal Storage Conditions:* Pro Sile Advanced AG (pg 13-14) Pro Sile AP (pg 18) Sub-optimal Storage Conditions: Crop Cure (pg 19-22) Pro Sile Advanced ASB (pg 16-17)
Corn Silage	65-70	62-67	62-67	NA	Optimal Storage Conditions:* Pro Sile Advanced CS (pg 10-11) Pro Sile AP (pg 18) Sub-optimal Storage Conditions: Crop Cure (pg 19-22) Pro Sile Advanced ASB (pg 16-17)

	Storage Type				
	Bunker/Pile	Upright Silo	Bag	Balage	
Feed Type	**Whole Plant Moisture**				**Forage Additive**
Sorghum Silage	65-70	62-67	62-67	NA	**Optimal Storage Conditions:*** Pro Sile™ Advanced CS (pg 10-11) Pro Sile AP (pg 18) **Sub-optimal Storage Conditions:** Crop Cure® (pg 19-22) Pro Sile Advanced ASB (pg 16-17)
High Moisture Grain	28-35	28-35	28-35	NA	**Optimal Storage Conditions:*** Pro Sile Advanced ASB (pg 16-17) **Sub-optimal Storage Conditions:** Crop Cure (pg 19-22)
Earlage or Snaplage	35-45	35-45	35-45	NA	**Optimal Storage Conditions:*** Pro Sile Advanced ASB (pg 16-17) **Sub-optimal Storage Conditions:** Crop Cure (pg 19-22)

***Optimal Storage Conditions:**

- Harvested at correct whole plant moisture.
- Bunker and piles are packed properly with a dry matter density above 15 lbs./cu ft.
- Porosity score of less than 40.
- Pile covered with high quality plastic (2 layers preferred).
- Tires touching for weighting down plastic.
- Well managed face.
- Upright silos filled quickly.
- Bags and balage stored on solid, smooth, well-drained areas free of weeds.
- Rodent and wildlife must be controlled near and around all storage types.

Crop Cure

Pro Sile

Forage Additive Product Guide

Find which forage product will work best for your unique forage situation.

Product	Pro Sile™ Advanced AG	Pro Sile Advanced CS	Pro Sile Advanced ASB	Pro Sile AP
Crop Usage	Alfalfa, Grass, Small Grain, Sudan Silage	Corn Silage	Corn Silage, HM Corn, Earlage or Snaplage	Alfalfa, Corn, Grass, Small Grain, Sorghum Silage
Features & Benefits	Water soluble or dry granular inoculant designed for a fast and efficient fermentation that will improve dry matter & nutrient preservation. Unique blend of enzymes to improve fiber and starch digestibility. Four strong, reliable strains of bacteria that perform over a wide range of moisture conditions and pH ranges.	Water soluble or dry inoculant designed for a fast and efficient fermentation that will improve dry matter & nutrient preservation. Unique combination of bacteria strains proven to improve starch digestibility. Unique blend of enzymes to improve fiber and starch digestibility. Three different strains of bacteria that provide optimal pH drop under a wide range of fermentation conditions.	Water soluble inoculant designed to control yeast growth and improve aerobic stability & bunk life. Unique combination of LA producing bacteria to work on the front end of fermentation and *L. Buchneri* to work on the back end of fermentation. Improved fiber digestibility. Improved animal performance due to improved NDFd and starch digestibility.	Water soluble inoculant designed for a fast and efficient fermentation that will improve dry matter & nutrient preservation. Featuring three strains of bacteria that perform over a wide range of moisture conditions and pH ranges. Improves forage quality by reducing protein degradation during fermentation.
Product Form	Water Soluble or Dry Granular	Water Soluble or Dry Granular	Water Soluble	Water Soluble
Appl. Rate	One 250 gm package of water soluble treats 250 tons of silage. One 50 lb bag of dry granular treats 100 tons of silage. Applies 150,000 CFU/gm of silage.	One 250 gm package of water soluble treats 250 tons of silage. One 50 lb bag of dry granular treats 100 tons of silage. Applies 150,000 CFU/gm of silage.	One 500 gm package treats 250 tons of corn silage or 165 tons of HM corn/earlage. Applies 500,000 CFU/gm of corn silage & 750,000 CFU/gm of HM corn/earlage.	One 1000 gm package of water soluble treats 1000 tons of silage. Applies 150,000 CFU/gm of silage.
Packaging	WS - 250 gm canister DG - 50 lb. bag	WS - 250 gm canister DG - 50 lb. bag	500 gm canister	1000 gm plastic canister

Crop Cure

ProSile

Product	Crop Cure® (Dry)	Crop Cure 2 (WS)	TMR Enhancer
Crop Usage	All Crops	All Crops	All TMR's
Features & Benefits	Dry granular organic acid designed to assist the naturally occurring bacteria for a fast and efficient fermentation. Helps manage the negative challenges of difficult harvest conditions. Reduces heating from yeast and other spoilage organisms to improve bunk life. Improves dry matter and nutrient preservation.	Water soluble organic acid designed to assist the natural occurring bacteria for a fast and efficient fermentation. Helps manage the negative challenges of difficult harvest conditions. Reduces heating from yeast and other spoilage organisms to improve bunk life. Improves dry matter and nutrient preservation. Buffered to reduce corrosiveness.	Bunk stabilizer-prevents bunk heating during warm summer temperatures and fresh forage. Contains Sodium Diacetate which reduces heating from yeast and other spoilage organisms to improve bunk life. Improves dry matter and nutrient preservation. Enhances rumen function - research proven to enhance feed utilization. Contains: Concentrated Yeast Culture, Potassium Carbonate, Magnesium, Simple Sugars.
Product Form	Dry Granular	Water Soluble	Dry Granular
Appl. Rate	1 - 2 lbs of Crop Cure/ton of silage. 3 - 6 lbs/ton of HM grain 3 - 5 lbs/ton of baled hay 1 - 6 lbs/ton of ground feed	Mix 50 lbs of Crop Cure 2 for every 25 gal of solution. .25 - .5 gal/ton of silage 1 - 1.5 gal/ton of HM grain .75 - 1.25 gal/ton of baled hay .25 - 3.0 lb/ton of ground feed	4 - 6 lbs/ton of TMR
Packaging	50 lb. bag	50 lb. bag	50 lb. bag

Forage Solutions Backed By Research

Form-A-Feed's forage products are backed by both formal University research studies as well as numerous field trials.

Form-A-Feed is committed to research and development. This combined with over 30 years of experience in the forage microbial industry, assures our confidence in the quality of the forage products that we bring to the field.

If you are interested in research information about any of the Pro Sile or Crop Cure products, please reach out to your Form-A-Feed representative.

Forage Management Backed by Expertise

Forage best management practices are essential to improving forage digestibility and palatability. Improving forage quality will always improve animal productivity and profitability. Our full-service team is here to help you maximize your forage program and your operation's overall profitability.

Data & Analytics

- Complete forage management audits and scorecards
- Forage packing and density measurement
- Corn silage processing score evaluation
- Forage analysis reports
- Thermal imaging reports
- Comparative analysis of storage options to best meet your operational needs

Coaching & Training

- On farm forage best management practices team training
- Safety evaluations and recommendations
- On-site employee safety training
- Forage additive applicator training and support

Feed & Nutrition

- Forage analysis reports
- Ration balancing focused on maximizing your on-farm feeds
- Nutrition recommendations focused on animal health and performance with increased income over feed costs

Best Management Practices to Assure High Quality Forage

1. Size Silos Correctly

Research suggests that bunker face removal rate should be a minimum of 6 inches/day or preferred 12 inches/day to assure the highest quality feed is being fed.

2. Harvest Silage at the Correct Moisture

Reference chart on page 3 to determine the correct moisture to harvest each silage.

3. Chop at Proper Length of Cut

13 – 26mm TLC (theoretical length of cut) depending on forage category, KP type and setting, moisture, and storage type. Always consult your nutritionist and forage consultant to insure proper compaction.

4. Use an Inoculant

Microbial inoculants will improve silage fermentation and animal performance. Research shows that the type of inoculant a producer chooses can make a significant difference in silage quality. Pro Sile™ inoculants are formulated with proven ingredients backed by research to be the highest quality available.

5. Fill Silo Rapidly

By minimizing the amount of time between when the product is harvested and when it is sealed, you reduce the risks of spoilage. When air is present, mold and yeast microorganisms can grow and cause loss of silage quality. You must cover as quickly as possible to provide an anaerobic environment so the lactic acid-producing bacteria can go to work.

6. Pack Properly

Spend time packing from start to finish. It is recommended to pack for at least an hour after the final load has been delivered. A good packing weight rule of thumb; provide 800 lbs. of packing wt. for every ton of forage delivered/hour. Therefore if you can harvest 100 ton/hour you need 80,000 lbs. of packing wt. on the silo 100% of the time the feed is being delivered.

7. Seal Properly

A seal plays two important roles in bunker silos. First they provide an anaerobic environment for the lactic acid-producing bacteria. Second, they protect the forage from the weather. Weighting down the plastic is also very critical. If the plastic is not kept tight to the silage, it can actually act as a bellow, drawing air into the silo. Covering properly will return 6 to 10 times the cost of plastic and labor of handling it.

Harvesting Corn Silage

Harvesting corn silage at the proper stage of maturity will increase the energy content of the silage. Consistently producing top quality silages will help improve feed utilization and reduce purchased feed costs.

Chop Length Recommendations:
Kernel Processed: 13 - 19 mm TLC
Shredded Processed: 19 -27 mm TLC
Not Kernel Processed: 6 - 13 mm TLC

TLC: Theoretical length of cut

Conventional Kernel Processor (roll gap setting)

Moisture:	Roll Gap:
70%	2 mm
65%	1 mm
60%	0.5 mm

*Roll differential has a large impact on roll gap setting. Recommend 30% minimum, 50% ideal differential. Differential has critical impact on determining roll gap settings.

<30% differential = 0.5 - 1.0 mm
30% differential = 1.0 - 1.5 mm
40% differential = 1.5 - 2.0 mm
> 40% differential = 2 mm

Monitoring the precision of kernel processing during harvest:

1. Check on a regular basis. Scoring should occur every 2-3 hours.

2. Use a full 32 oz. cup of fresh cut silage.

Quality of processing job:	*Number of whole or 1/2 kernels:*
Under processed	≥5
Average	3-4
Acceptable	1-2
Optimum	0

	Storage Type				
	Bunker/Pile	Upright Silo	Bag	Balage	
Feed Type	**Whole Plant Moisture**				
Corn Silage	65-70	62-67	62-67	NA	**Optimal Storage Conditions:*** Pro Sile™ Advanced CS (pg 10-11) Pro Sile AP (pg 18) **Sub-optimal Storage Conditions:** Crop Cure® (pg 19-22) Pro Sile Advanced ASB (pg 16-17)
Sorghum Silage	65-70	62-67	62-67	NA	**Optimal Storage Conditions:*** Pro Sile Advanced CS (pg 10-11) Pro Sile AP (pg 18) **Sub-optimal Storage Conditions:** Crop Cure (pg 19-22) Pro Sile Advanced ASB (pg 16-17)

Pro Sile™ Advanced CS

70759-187 - 250 gm. WS
70760-172 - 50 lb. Dry

Pro Sile Advanced CS is an innovative corn silage inoculant with three different strains of lactic acid-producing bacteria to improve nutrient preservation and absorption. The Pro Sile *Enterococcus facium* strain is proven to increase starch digestibility in corn silage. It features a proven enzyme package to provide an energy source for the bacteria and improve fiber and starch digestibility. Pro Sile Advanced CS can be used for corn and sorghum silage, high-moisture corn, or high-moisture ear corn.

Benefits

- Increased rumen starch digestibility compared to non-inoculated corn silage.
- Improved fiber digestibility.
- Fast efficient fermentation.
  - o Faster pH decline.
  - o Improved DM retention.
  - o Higher lactic acid production.
  - o Lower nutrient degradation.
- Improved animal performance due to improved NDFd and starch digestibility.
- Research demonstrates milk production increased by an average of .72 lbs. of milk production for each 1% improvement in total-tract starch digestibility.
- Fast growing and competitive lactic acid bacteria dominate and significantly reduce silage pH.

Features

- Bacteria stabilizers to assure bacteria are healthy and viable at the time of application.
- Contains multiple strains of bacteria proven to be effective throughout all stages of fermentation.
- Available in easy-to-mix water-soluble and dry granular form.
- Excellent mixing and re-suspension characteristics.
- Formulated, blended, and packaged in our certified facility to ensure viability and effectiveness.
- Non-corrosive and non-toxic.

Pro Sile Advanced CS Inoculant vs. Control on Corn Silage (4 weeks)

Treatment	Control	Pro Sile Advanced CS	Pro Sile Improvement
DMI (lb)	49.2	49.7	+0.5 lb (1.1%)
Milk (lb)	78.5	80.8	+2.3 lb (2.9%)
Protein (lb)	2.3	2.5	+0.2 lb (8.5%)

Cows fed corn silage inoculated with Pro Sile Advanced CS had similar DMI and 2.3 lb. significant increase in milk production, as well as 0.2 lb. more protein for a consistent four weeks.

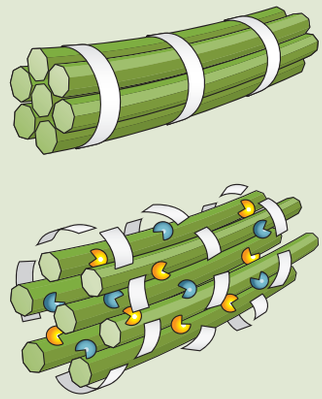
The diagram below illustrates how Pro Sile Advanced enzyme packages break up fiber bundles allowing rumen microbes more access to plant fiber increasing nutrient absorption.

Enzymes

Amylase (Bacillus subtilis): 4540 BAU per ton of forage

Xylanase (Trichoderma longibrachiatum): 908 XU per ton of forage

Glucanase (Trichoderma longibrachiatum): 908 BGU per ton of forage



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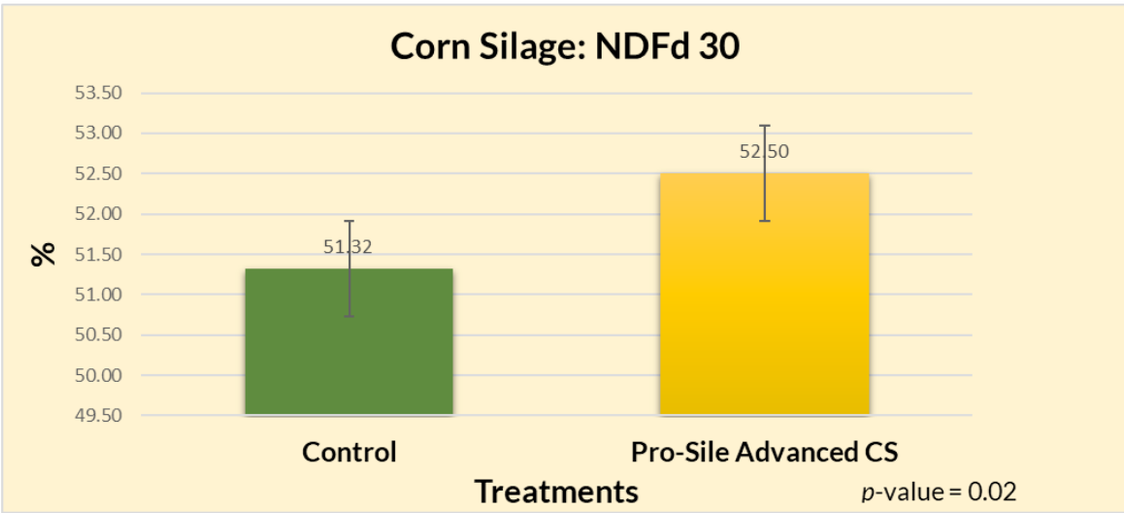
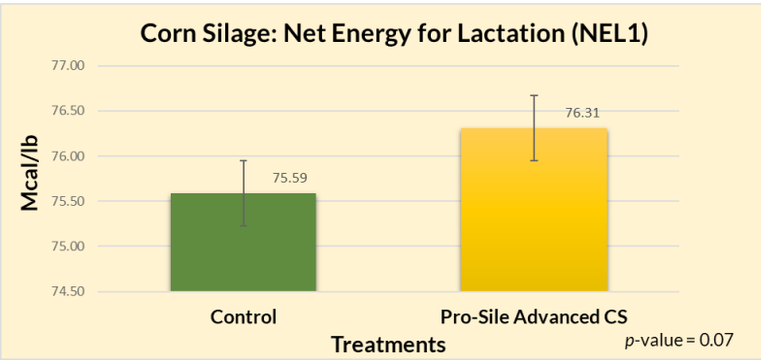
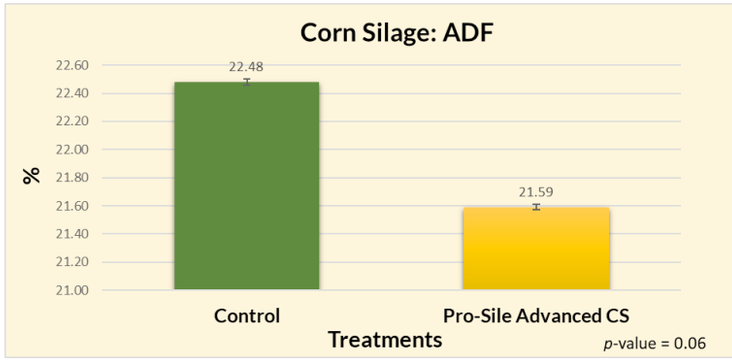






Storage

- For short term storage, store in a cool, dry area away from sunlight.
- Once container is open, any unused product should be stored in refrigerator.
- For maximum long-term storage, between crop seasons etc., store in a freezer.
- Do not leave Pro Sile Dry Granular bags open during storage.
- Discard any product not used within 7 days of opening if unable to store in a refrigerator.
- Unopened canisters or bags can be stored for up to 18 months at 70 degrees.

Guaranteed Analysis

BACTERIA SPECIES:
Lactobacillus plantarum, *Enterococcus facium*, *Pediococcus Acidilactici*, and *Pediococcus pentosaceus*. Total microbial activity not less than 136.5 billion CFU/g

Packaging

- Each 250 gram container of water soluble will treat 250 tons of harvested forage.
- Each 50 lb bag of dry granular will treat 100 tons of as-fed forage.

Directions for Use

Water Soluble Form:

- Apply 1 g of product per ton of harvested crop to provide 150,000 CFU of live, naturally occurring microorganisms to each gram of crop.
- Mix with cool, clean, water.
- Mix and apply solution based on application rate for the type of applicator.
  - Standard application: Mix to apply 1 – 2 qts/ton of harvested crop.
  - Low Volume Application: Pro-Sile Advanced CS has been formulated so that it can be applied through low volume application systems.
- Bacteria will remain viable in concentrated tank mix for up to 2 days at 70 degrees F or below.

Dry Form:

- Apply ½ lb of Pro Sile Advanced CS per ton of crop to provide 150,000 CFU/g of crop.

Harvesting Alfalfa/Grass Silage

The goal in managing alfalfa or grass silage is to maintain consistent quality haylage throughout the storage structure with reduced protein loss from heat damage. Harvesting at early to late bud stage provides high quality forage which supports higher milk production and reduces supplementation costs.

- The earlier alfalfa is harvested, the higher the feed value will be. Each day the harvest is delayed past late bud stage, crude protein is reduced by 1/2% while the ADF level is increased by 0.7% and the NDF level is increased by 0.9% (University of Wisconsin.)

- Studies have shown that for each day alfalfa matures past late bud stage, milk production from that alfalfa is decreased by 0.86 pounds per cow per day.

Stage of Maturity	
Early Bud	1-2 nodes with buds, no flowers
Late Bud	More than 3 nodes, no flowers
Early Bloom	1 node with 1 open flower
Late Bloom	More than 2 nodes with open flowers

	Storage Type				
	Bunker/Pile	Upright Silo	Bag	Balage	
Feed Type	**Whole Plant Moisture**				**Forage Additive**
Alfalfa Silage	65-70	62-67	62-67	NA	**Optimal Storage Conditions:*** Pro Sile™ Advanced AG (pg 13-14) Pro Sile AP (pg 18) **Sub-optimal Storage Conditions:** Crop Cure® (pg 19-22) Pro Sile Advanced ASB (pg 16-17)
Grass Silage	55-70	55-65	55-67	50-65	**Optimal Storage Conditions:*** Pro Sile Advanced AG (pg 13-14) Pro Sile AP (pg 18) **Sub-optimal Storage Conditions:** Crop Cure (pg 19-22) Pro Sile Advanced ASB (pg 16-17)
Small Grain Silage	55-70	55-65	55-67	50-65	**Optimal Storage Conditions:*** Pro Sile Advanced AG (pg 13-14) Pro Sile AP (pg 18) **Sub-optimal Storage Conditions:** Crop Cure (pg 19-22) Pro Sile Advanced ASB (pg 16-17)

Pro Sile™ Advanced AG

70756-187 - 250 gm. WS
70758-172 - 50 lb. Dry

Pro Sile Advanced AG is formulated with four different strains of lactic acid producing bacteria. It features our proven enzyme package to provide an energy source for bacteria, and improves fiber & starch digestibility. Pro Sile Advanced AG can be used for alfalfa, grass, and early vegetative small grain silages.

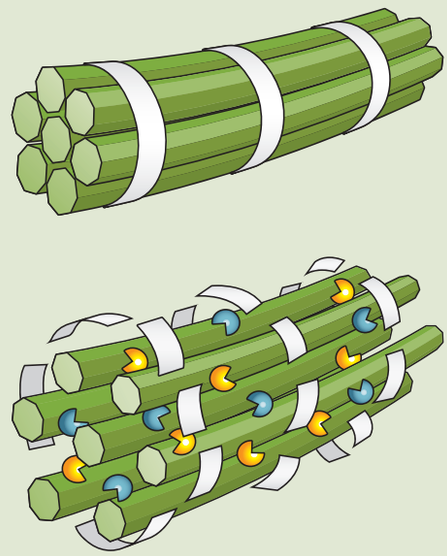
Benefits

- Improved fiber digestibility.
- Fast, efficient fermentation:
  - o Faster pH decline.
  - o Improved DM retention.
  - o Higher lactic acid production.
  - o Lower nutrient degradation.
- Reduces butyric acid production and clostridial counts when challenged by high contaminants or high moisture conditions.
- Improved animal performance due to improved NDFd digestibility.
- Fast growing and competitive lactic acid bacteria dominate and significantly reduce silage pH.

Features

- Bacteria stabilizers to assure bacteria are healthy and viable at the time of application.
- Contains multiple strains of bacteria proven to be effective throughout all stages of fermentation.
- Available in easy-to-mix water-soluble and dry granular form.
- Excellent mixing and re-suspension characteristics.
- Formulated, blended, and packaged in our certified facility to ensure viability and effectiveness.
- Non-corrosive and non-toxic.

The diagram below illustrates how Pro Sile Advanced enzyme packages break up fiber bundles allowing rumen microbes more access to plant fiber, increasing nutrient absorption.



Enzymes

Amylase (Bacillus subtilis): 4540 BAU per ton of forage

Xylanase (Trichoderma longibrachiatum): 908 XU per ton of forage

Glucanase (Trichoderma longibrachiatum): 908 BGU per ton of forage

Pro Sile™ Advanced AG

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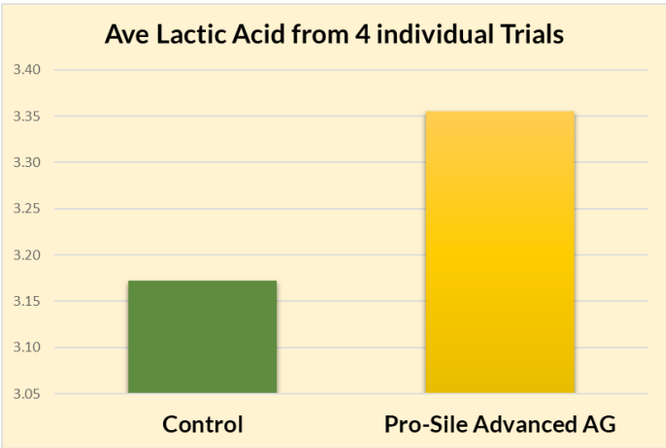
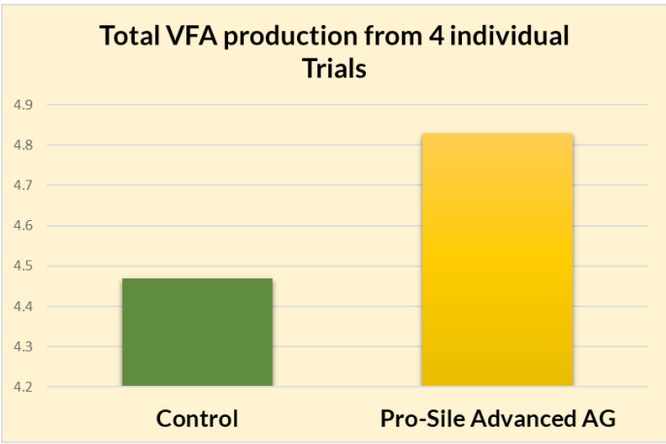
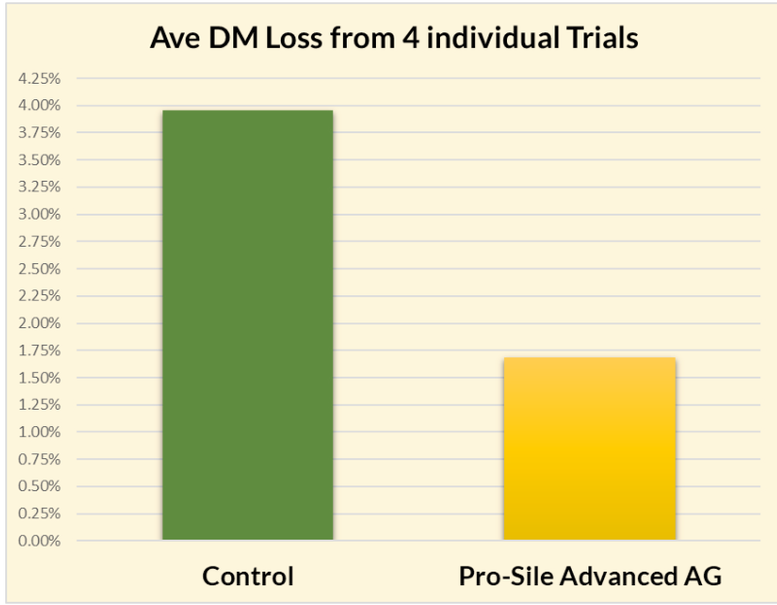






Assuming a value of alfalfa silage of $70/ton as fed (at 60% moisture), each percentage point improvement in DM recovery is worth $1.75/ton. Pro Sile Advanced AG improves DM recovery by 2.2 percentage points or a value of $3.85/ton.

Storage

- For short term storage, store in a cool, dry area away from sunlight.
- Once container is open, any unused product should be stored in refrigerator.
- For maximum long-term storage, between crop seasons, etc., store in a freezer.
- Do not leave Pro Sile Dry Granular bags open during storage.
- Discard any product not used within 7 days of opening if unable to store in a refrigerator.
- Unopened canisters or bags can be stored for up to 18 months at 70 degrees.

Guaranteed Analysis

BACTERIA SPECIES:
Pediococcus acidilactici, *Pediococcus pentosaceus*, *Lactococcus lactis*, *Lactobacillus plantarum*. Total microbial activity not less than 136.5 billion CFU/g. Bacteria stabilizers to assure bacteria are healthy and viable at the time of application.

Packaging

- Each 250 gram container of water soluble will treat 250 tons of harvested forage.
- Each 50 lb bag of dry granular will treat 100 tons of as-fed forage.

Directions for Use

Water Soluble Form:

- Apply 1 g of product per ton of harvested crop to provide 150,000 CFU of live, naturally occurring microorganisms to each gram of crop.
- Mix with cool, clean, water.
- Mix and apply solution based on application rate for the type of applicator.
  - Standard application: Mix to apply 1 – 2 qts/ton of harvested crop.
  - Low Volume Application: Pro Sile Advanced AG has been formulated so that it can be applied through low volume application systems.
- Bacteria will remain viable in concentrated tank mix for up to 2 days at 70 degrees F or below.

Dry Form:

- Apply ½ lb of Pro Sile Advanced AG per ton of crop to provide 150,000 CFU/g of crop.

Harvesting HMC and Snaplage

The goal in managing high moisture corn or snaplage is to maintain maximum quality of high moisture corn throughout the storage structure. This enhances feed efficiency and milk production and reduces the cost of milk production.

What needs to be considered:

- Moisture of the crop.
- Mold, mycotoxin, and yeast loads.
- How feed will be processed before storage.
- Type of storage facility.
- Feed removal rate.

Reducing spoilage during storage:

- Size storage facility properly: 2-6 inch minimum feed-out rate depending on storage type, moisture, and processing score.
- Harvest at proper moisture
    - HMSC: 28-35% moisture
    - Snaplage/Earlage: 35-45% moisture
- Process properly and apply the correct additive.
- Fill fast, pack, and seal.

	Storage Type				
	Bunker/Pile	Upright Silo	Bag	Balage	
Feed Type	**Whole Plant Moisture**				**Forage Additive**
High Moisture Grain	28-35	28-35	28-35	NA	**Optimal Storage Conditions:*** Pro Sile™ Advanced ASB (pg 16-17) **Sub-optimal Storage Conditions:** Crop Cure® (pg 19-22)
Earlage or Snaplage	35-45	35-45	35-45	NA	**Optimal Storage Conditions:*** Pro Sile Advanced ASB (pg 16-17) **Sub-optimal Storage Conditions:** Crop Cure (pg 19-22)

Pro Sile™ Advanced ASB

70761-187 - 500 gm. WS

Pro Sile Advanced ASB (Aerobic Stability Buchneri) is a water-soluble inoculant containing lactic acid-producing bacteria blended with *L. Buchneri* to enhance nutrient preservation and aerobic stability upon feed-out of silages or high-moisture corn. Pro Sile Advanced ASB is formulated to produce high levels of lactic acid during the beginning of fermentation as well as increased levels of acetic acid at the end. Pro Sile Advanced ASB features our unique enzyme package proven to enhance fiber digestibility.

Pro Sile Advanced ASB is an inoculant for high moisture grain crops at risk of aerobic spoilage.

High moisture grain crops such as high moisture corn, snaplage, earlage, etc. tend to be at a higher risk of aerobic spoilage during the feed-out phase of storage. Often elevated levels of yeast and molds will cause increased temperatures of the forage. This reduces the nutrient content of the feed, creating a negative result in animal performance. The use of an *L. buchneri* inoculant on these crops has proven to significantly reduce those effects.

Benefits

- Improved aerobic stability.
- Improved fiber digestibility.
- Fast and efficient fermentation.
    - o Faster pH decline.
    - o Improved DM retention.
    - o Higher lactic acid production.
    - o Lower nutrient degradation.
- Improved animal performance due to improved NDFd and starch digestibility.
- Research demonstrates milk production increased by an average of .72 lbs. of milk production for each 1% improvement in total-tract starch digestibility.
- Fast growing and competitive lactic acid bacteria dominate and significantly reduce silage pH.

Features

- Bacteria stabilizers to assure bacteria are healthy and viable at the time of application.
- Water-soluble form for ease of application.
- Excellent mixing and re-suspension characteristics.
- Formulated, blended, and packaged in our certified facility to ensure viability and effectiveness.
- Non-corrosive and non-toxic.

Other situations when Pro Sile Advanced ASB should be used:

- Silages to be fed during warmer temperatures.
- Crops that are exposed to conditions that have created high yeast and mold loads in the field.
- Silage that will be transported or relocated and exposed to aerobic conditions for extended periods of time.

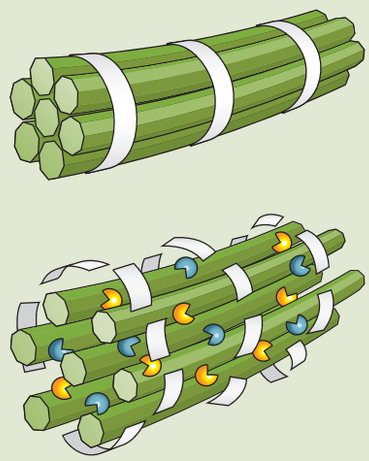
The diagram below illustrates how Pro Sile Advanced enzyme packages break up fiber bundles allowing rumen microbes more access to plant fiber increasing nutrient absorption.

Enzymes

Amylase (Bacillus subtilis): 4540 BAU per ton of forage

Xylanase (Trichoderma longibrachiatum): 908 XU per ton of forage

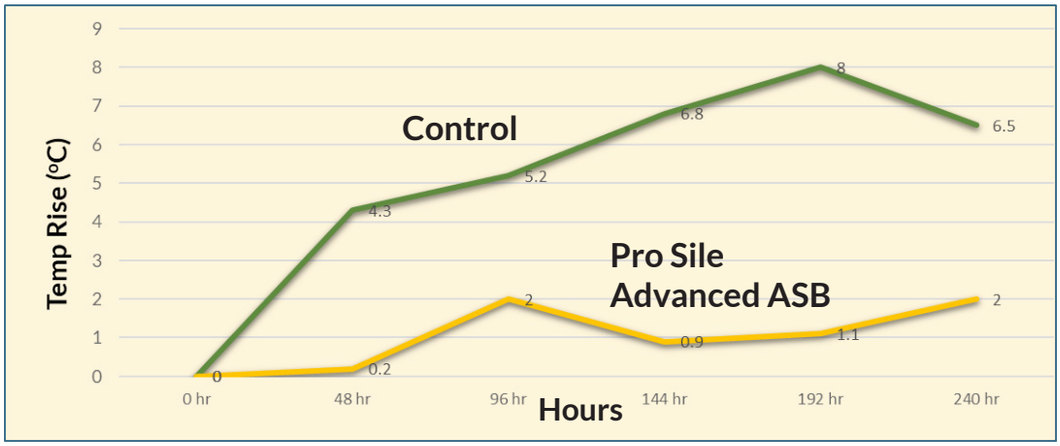
Glucanase (Trichoderma longibrachiatum): 908 BGU per ton of forage



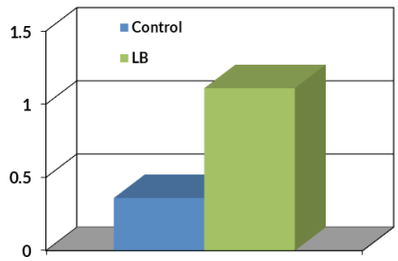
Pro Sile

Pro Sile™ Advanced ASB

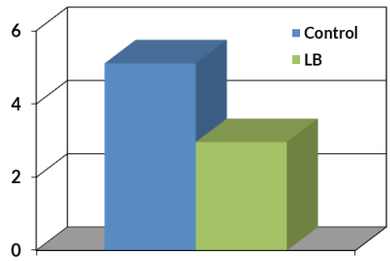
Effect of Pro Sile Advanced ASB on Aerobic Stability



Effect of *L. Buchneri* on Aerobic Stability in High Moisture Corn - Lab Silos



Acetic Acid %



Logs of yeast (cfu/gram)

Storage

- For short term storage, store in a cool, dry area away from sunlight.
- Once container is open, any unused product should be stored in refrigerator.
- For maximum long-term storage, between crop seasons etc., store in a freezer.
- Do not leave Pro Sile dry granular bags open during storage.
- Discard any product not used within 7 days of opening if unable to store in a refrigerator.
- Unopened canisters or bags can be stored for up to 18 months at 70 degrees F.

Guaranteed Analysis

BACTERIA SPECIES:
Lactobacillus buchneri and Pediococcus pentosaceus. Total microbial activity not less than 455 billion CFU/g.

Packaging

- Each 500 gram jar of water soluble will treat 250 tons of harvested silage or 166 tons of HM Corn, snaplage or earlage.

Directions for Use

Water Soluble Form:

- Mix with cool, clean water.
- Mix and apply solution based on application rate for the type of applicator.
  - Standard application: Mix to apply 1 – 2 qts/ton of harvested crop.
  - Low volume application: Pro Sile Advanced ASB has been formulated so that it can be applied through low volume application systems.
- Bacteria will remain viable in concentrated tank mix for up to 2 days at 70 degrees F or below.

Corn and Sorghum Silage:

- Apply 2 grams of product per ton of harvested crop to provide 500,000 CFU of live, naturally occurring microorganisms to each gram of crop.

High Moisture Corn, Snaplage, and Earlage:

- Apply 3 grams of product per ton of harvested crop to provide 750,000 CFU live, naturally occurring microorganisms to each gram of crop.

Pro Sile™ AP

70762-187 - 1000 gm. WS

Pro Sile AP is a water soluble inoculant with three different strains of lactic acid-producing bacteria to aid fermentation and improve nutrient preservation when applied to all types of high moisture forages. Pro Sile AP provides 150,000 CFU's of live naturally occurring lactic acid producing bacteria per gram of forage.

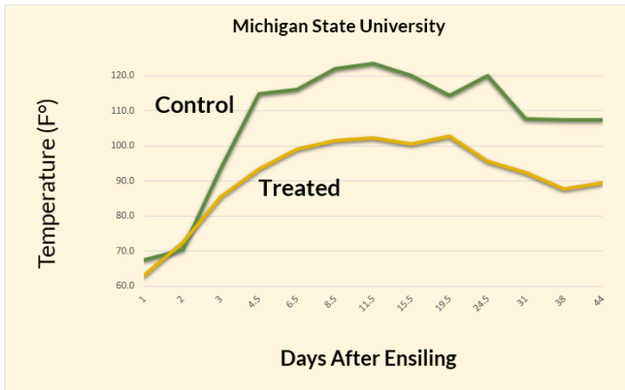
Benefits

- Promotes rapid production of lactic acid for a fast, efficient fermentation, preserving energy.
- Improves forage quality by reducing protein degradation & ammonia levels during fermentation.
- Expedites pH decline of forage to stabilize the feed.
- Reduces dry matter and nutrient loss, leading to increased animal performance.
- Excellent mixing and re-suspension characteristics.

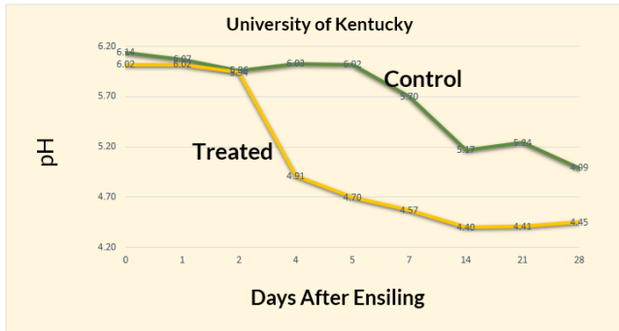
Features

- Bacteria stabilizers to assure bacteria are healthy and viable at the time of application.
- Contains multiple strains of bacteria proven to be effective throughout all stages of fermentation.
- Water-soluble form for ease of application.
- Formulated, blended, & packaged in our certified facility to ensure viability and effectiveness.
- Non-corrosive and non-toxic.

Temperature: treated vs. untreated



pH levels: treated vs. untreated



Storage

- For short term storage, store in a cool, dry area away from sunlight.
- Once container is open any unused product should be stored in refrigerator.
- For maximum long-term storage, between crop seasons, etc., store in a freezer.
- Do not leave Pro Sile dry granular bags open during storage.
- Discard any product not used within 7 days of opening if unable to store in a refrigerator.
- Unopened canisters or bags can be stored for up to 18 months at 70 degrees.

Guaranteed Analysis

BACTERIA SPECIES:
Lactobacillus plantarum, Pediococcus Acidilactici, and Pediococcus pentosaceus Total microbial activity not less than 136.5 billion CFU/g

Packaging

Each 1000 gram container of water soluble will treat 1000 tons of harvested forage.

Directions for Use

Water Soluble Form:

- Apply 1 g of product per ton of harvested crop to provide 150,000 CFU of live, naturally occurring microorganisms to each gram of crop.
- Mix with cool, clean, water.
- Mix and apply solution based on application rate for the type of applicator.
  - Standard application: Mix to apply 1 – 2 qts/ton of harvested crop.
  - Low Volume Application: Pro Sile AP has been formulated so that it can be applied through low volume application systems.
- Bacteria will remain viable in concentrated tank mix for up to 2 days at 70 degrees F or below.

Crop Cure

Crop Cure® is an organic acid preservative used to control mold & yeast growth, reduce heating and protect nutrients in silages and feed stored in challenging conditions. Crop Cure can be applied to all forms of silage, processed grains and complete feeds.

Crop Cure Benefits

- Helps manage the negative challenges of difficult harvest conditions.
- Enhances proper fermentation which reduces fermentation dry matter losses.
- Improves palatability and feed efficiency.
- Mold and yeast inhibitor reducing feed shrink & critical nutrient loss due to secondary fermentation.
    - o Research has shown 54% less mold than untreated forage.
    - o University studies have shown 66% less mold compared to untreated ground shelled corn.
- Research Proven
    - o 3.08 pound increase in milk production (4% FCM) per cow/ per day (University of Minnesota).
    - o 89.5 pounds more milk per ton of haylage based on 4% fat corrected milk (Ohio State University).
    - o Reduces dry matter loss up to 50% (Ohio State University).
    - o Research shows treated haylage has better bunk stability (University of Minnesota).
    - o Crop Cure haylage produces an increase in beneficial acids, an important factor in better butterfat test (University of Minnesota) .
    - o Increase in lactic acid content of 114-138% over control group. This means better fermentation, reduced mold spore growth, improved protein value and longer bunk life. (University of Wisconsin).
    - o Reduces dry matter loss by up to 50%. (University of Minnesota).

Crop Cure Features

- EPA and FDA GRAS clearance. Crop Cure treated forages can be fed to all livestock.
- Effective on a wide variety of spoilage organisms.
- Easy to use water soluble or dry form.
- Cost effective.

Special Precautions:

- Not recommended for use on whole shelled corn.
- Crop Cure must be applied accurately, and uniform application is critical to ensure optimal performance.
- All high-moisture ingredients should be treated immediately upon harvest.
- Storage facility must be sealed securely.

Crop Cure® (Dry) 79800-172

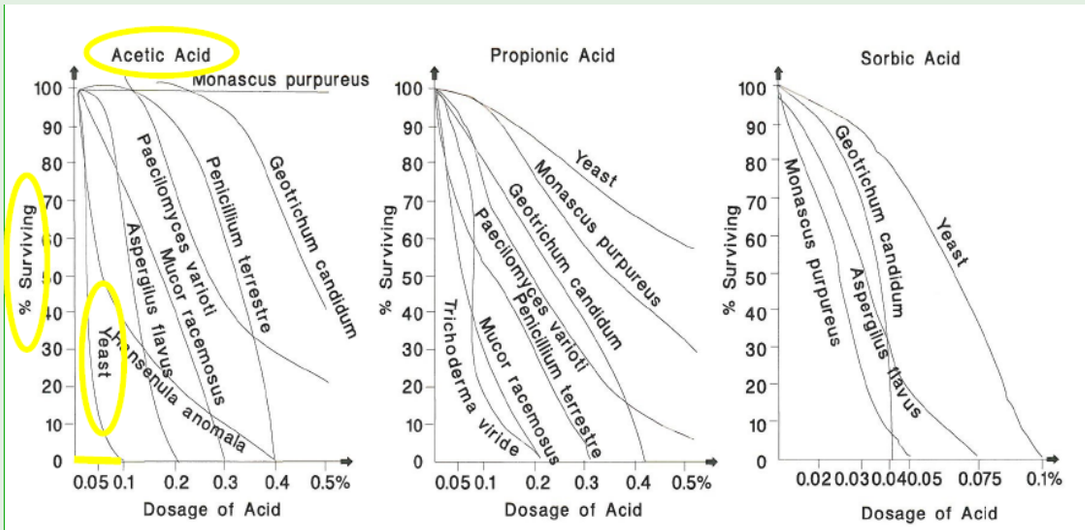
Crop Cure is a granular organic acid preservative for all silages, high moisture ensiled corn, baled hay and ground feed. Crop Cure enhances silages and high moisture corn fermentation, allowing you to bale hay at higher than normal moistures or hold ground feed rations for 10-14 days without mold growth or heating.

Directions for Use

Corn, Hay, Grass, Oat and Sorghum Silage	High Moisture Ensiled Ear Corn	High Moisture Ensiled Shell Corn	Baled Hay
50-70% Moisture	**25-35% Moisture**	**25-35% Moisture**	**15-20% Moisture**
1-2 lbs./ton	3-6 lbs./ton	3-6 lbs./ton	3-4 lbs/ton
Above 70% Moisture	**Above 35% Moisture**	**Above 35% Moisture**	**20-25% Moisture**
Not recommended	Not recommended	Not recommended	4-5 lbs/ton

Ground Feed			
Moisture Content of Feed	**Ambient Temperatures**		
	0-32°F	**33-55°F**	**56-80°F**
15%	1 lb/ton	1 lb/ton	2 lb/ton
15-20%	2 lb/ton	3 lb/ton	4 lb/ton
20-25%	3 lb/ton	4 lb/ton	5 lb/ton
25-30%	4 lb/ton	5 lb/ton	6 lb/ton
Based on a 10-14 day storage period.			

Efficacy of Organic Acid to Inhibit Growth of Molds



From: Pelhate, J. 1973. Stabilisation de la mycoflore de maïs-grains Humides ensilés. Ann. Tech. Agric. 22:647-661.

Crop Cure 2 (WS) 79804-172

Crop Cure 2 is a water soluble organic acid preservative for all silages, high moisture ensiled corn, baled hay and ground feed. Crop Cure enhances silage and high moisture corn fermentation, allows you to bale hay at higher than normal moistures, or hold ground feed rations for 10-14 days without mold growth or heating.

Crop Cure 2 is buffered for less corrosiveness, and has an added green color agent, making it easier to locate the inventory level in the tank.

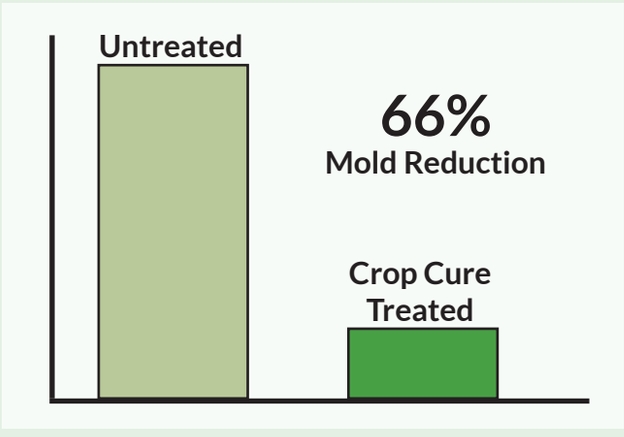
Directions for Use

Dissolve 10 pounds of Crop Cure 2 in water to make 5 gallons of solution (or 2 pounds of Crop Cure 2 in 1 gallon of water.)

Corn, Hay, Grass, Oat and Sorghum Silage	High Moisture Ensiled Ear Corn	High Moisture Ensiled Shell Corn	Baled Hay
50-70% Moisture	**25-35% Moisture**	**25-35% Moisture**	**15-20% Moisture**
1/4 - 1/2 gallon/ton	1 - 1 1/2 gallon/ton	1 - 1 1/2 gallon/ton	3/4 - 1 gallon/ton
Above 70% Moisture	**Above 35% Moisture**	**Above 35% Moisture**	**20-25% Moisture**
Not recommended	Not recommended	Not recommended	1 - 1 1/2 gallon/ton

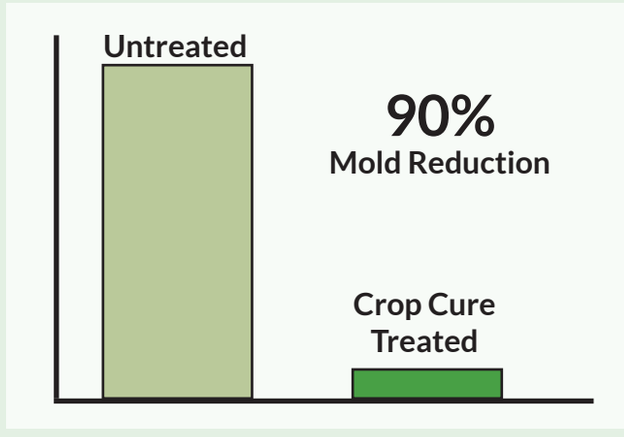
Ground Feed			
Moisture Content of Feed	**Ambient Temperatures**		
	0-32°F	**33-55°F**	**56-80°F**
15%	1/2 lb/ton	1/2 lb/ton	1 lb/ton
15-20%	1 lb/ton	1 1/2 lb/ton	2 lb/ton
20-25%	1 1/2 lb/ton	2 lb/ton	2 1/2 lb/ton
25-30%	2 lb/ton	2 1/2 lb/ton	3 lb/ton
Based on a 10-14 day storage period.			

Mold Research for High Moisture Ensiled Corn



High moisture ensiled corn research: University of Wisconsin, River Falls.

Mold Research for Corn Silage



Corn silage research: Food Technology Chicago, Illinois

Crop Cure Benefits All Forages

Silages

Helps reduced heating, spoilage and mold growth.

Helps save more available protein for digestion. Up to 10% more with haylage and 15% more with corn silage.

Helps improve palatability and feed efficiency.

Helps improve feedlot performance with improved feed conversion and higher daily gains.

Treated silages (haylage & corn silage) have up to 50% less dry matter loss than untreated silages.

Ground Feeds

Inhibits heating and mold growth for 10 – 14 days when used in rations up to 30% moisture.

Eliminates frequent grinding and mixing.

Research shows it improves milk production up to 1 lb/cow/day in early lactation and helps improve butterfat production up to ½ point.

Research shows beef cattle have a 7 – 9% improvement in feed efficiency when fed treated rations.

Swine fed treated rations have shown increased daily gains of 0.06 lbs/head/day and significantly improved feed efficiency by 4%.

Improves the palatability of the ration.

High Moisture Ensiled Corn

Helps reduce heating and spoilage.

Mold growth is reduced by 66% when compared to untreated ensiled corn.

Improves palatability and feed efficiency.

Baled Hay

Allows baling hay up to 25% moisture, providing flexibility to bale earlier or before inclement weather sets in.

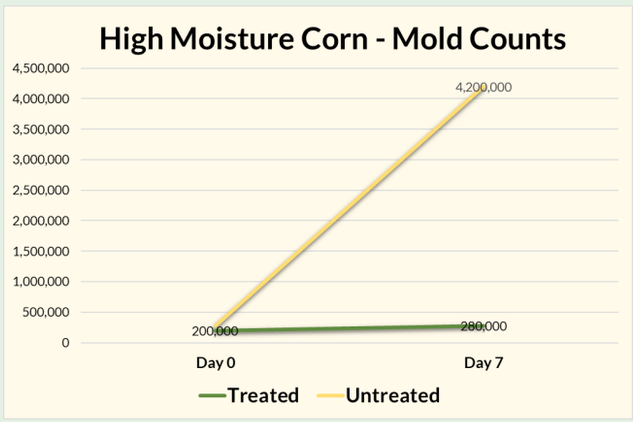
Stops excess molding and heating; mold growth is reduced by up to 97% , thus less hay is wasted due to mold and the accompanying heating associated with mold growth.

Saves more protein and nutrients since more protein rich leaves are saved. Extensive studies have shown that treated hay has 2% or more crude protein than hay baled at 15% (field dry) moisture.

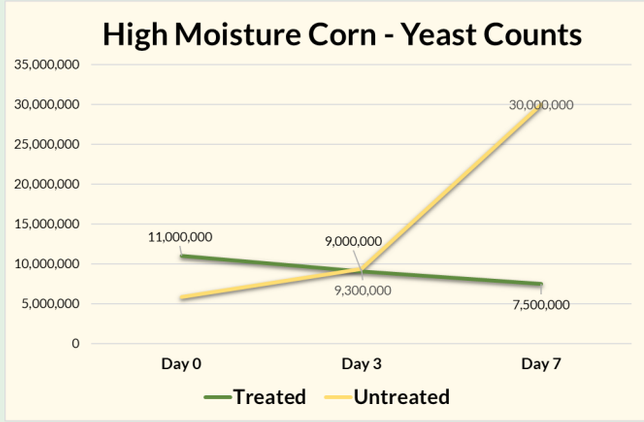
Treated hay retains its natural color much longer and has an added palatability factor.

Dry matter losses are reduced on treated hay that is stored earlier under cover or outside.

Crop Cure Bunk Life Field Trial



Treatment = 6 lb./ton Crop Cure, 21% Moisture



Treatment = 6 lb./ton Crop Cure, 21% Moisture

TMR Enhance-R®

29993-172

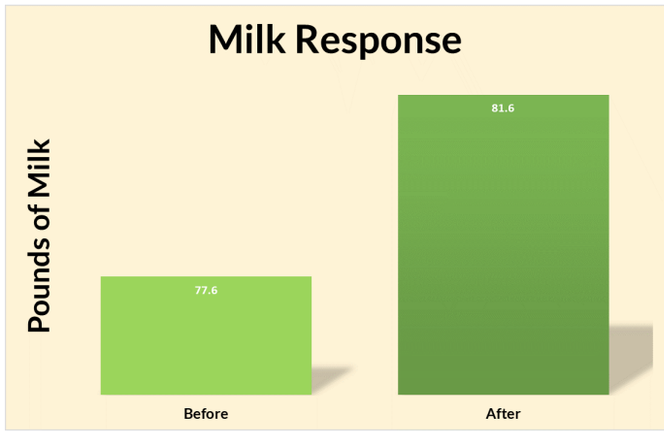
TMR Enhance-R is an advanced, cost-effective TMR additive that may just be one of the smartest management tools you can utilize in your battle against summer conditions. TMR Enhance-R was specifically designed with a combination of ingredients that will protect your TMR mix and enhance animal performance. This combination of ingredients will allow you to maintain the freshness of your TMR mix, plus it contains the ingredients to enhance rumen function and the digestibility of forages.

Benefits

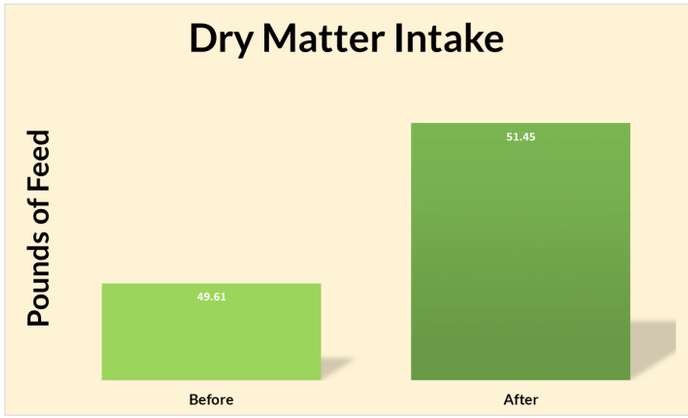
- **Stabilizes your bunk mix -** prevents reheating during times of heat or when you are feeding freshly harvested forages.
- **Enhanced rumen function** - research has proven that it enhanced feed utilization.
- **Improves or maintains dry matter intake.**
- **Improves or maintains milk production and components.**

Features

- Contains Crop Cure which enhances bunk life by stabilizing the pH.
- Contains a combination of buffering agents.
- Contains simple sugars for rapidly fermentable carbohydrates, thus offering a quick source of energy.
- Contains yeast culture which increases feed digestibility and improves palatability.
- Contains magnesium which aids in nutrient digestibility, improved performance and provides a calming effect.



Research March 2001. 35 day trial: 7 day pre-test period, 21 day test period, 7 day post-test period. Test consisted of 467 cows, 4 TMR groups. Forages: Corn silage and alfalfa haylage.



Feeding Directions:

Add TMR Enhance-R to the TMR at a rate of four pounds per ton. It can also be topdressed at a rate of 3 – 4 ounces per head per day.

App-A-Tite

75241-172

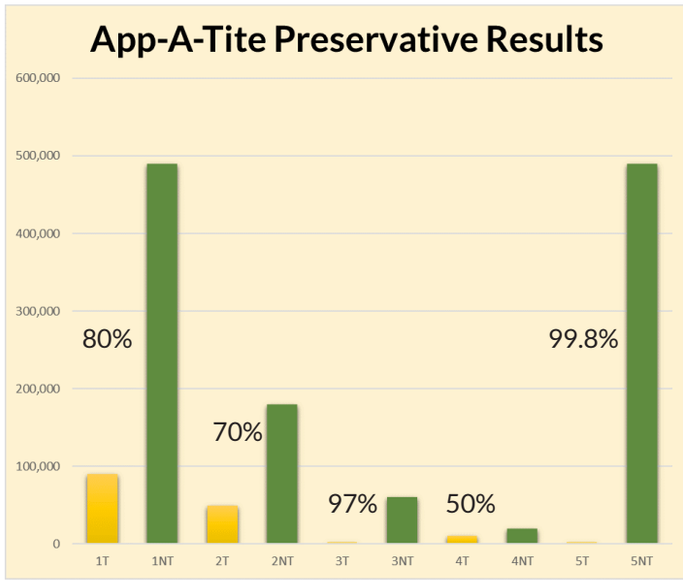
App-A-Tite is designed for use with out-of-condition forages, grains, or by-products when molds are a concern. App-A-Tite provides a unique blend of flow agents, antioxidants, and B-vitamins to minimize losses due to these conditions.

Benefits

- **Improves flowability -** better flow results in less caking and mold pockets, or out-of-feed incidence in automatic feeding systems.
- **Reduces growth of molds** - maximize nutrient availability to the animal for productivity, performance and health.
- **Supports immune function -** antioxidants help support immune function when low quality feeds challenge animal health.
- **Flexible and cost-effective -** Use when needed, and take out when not needed.

Features

- **Antioxidants** - shown to reduce mold growth 70% - 99% in total mixed rations and grain mixes.
- **Anti-caking properties** - provides flowability of meal feeds in bins.
- **Yeast cell wall** - clean, engineered fraction of yeast cell wall.
- **Multi-specie application** - convenient for feed mills serving various kinds of livestock operations.
- **B-Vitamins and flavors** - shown to stimulate appetite.



Percentage represents the percent decrease in active mold spores in App-A-Tite treated vs. non-treated.

Feeding Directions:

Mix App-A-Tite into feed as a flow agent at the rate of 5-20 pounds per ton, of feed as a source of antioxidants as recommended below:

Dairy and Beef Cattle: 2 ounces per head per day.

Equine: 1-2 ounces per head per day.

Swine and Poultry Complete Feeds: 5-20 pounds per ton of complete feed.

Silage Capacity Charts

Tower Silo Capacity Chart

Tons at various moistures

SILO SIZE	HIGH MOISTURE FORAGES				
	70%	65%	60%	55%	50%
12x30	70	61	52	47	42
12x40	106	93	80	72	64
12x50	147	129	110	99	88
12x60	192	160	142	129	114
14x40	145	128	110	99	88
14x50	200	175	150	135	120
14x60	260	228	195	176	156
14x70	325	293	245	226	194
16x40	189	164	142	128	114
16x50	261	233	195	180	156
16x60	341	300	255	225	204
16x70	425	386	322	281	260
18x50	330	290	247	222	198
18x60	430	376	322	291	258
18x70	539	472	405	365	324
18x80	660	578	493	446	396
20x30	220	195	170	145	120
20x40	295	260	222	195	170
20x50	407	356	305	275	244
20x60	529	463	397	358	318
20x70	660	578	495	446	396
20x80	800	705	600	544	480
20x90	950	846	710	653	570
24x70	947	830	710	640	568
24x80	1100	1038	883	800	707
24x90	1400	1245	1045	961	839

ProSile

Crop Cure

Horizontal Silo Capacity

A simple way to compute bunker capacity is to calculate the number of cubic feet (width x length x height) and multiply by 50 lbs. per cubic foot. This is then divided by 2,000 to compute the number of tons.

Example: (10 feet of depth) x (26 feet of width) x (80 feet of length) = 20,800 cubic ft. x 50/2,000 = 520 tons.

Minus or add volume in slopes as applicable.

Example: Average depth was calculated as 10 feet, but the front of the bunker slopes from the ground level to 30 feet back. Take 10 x 30 x 26 = 7,800/2 = 3,900 x 50/2,000 = 97.5 tons off.

Estimated Silage Bag Capacities

Bag Diameter	8 ft	8 ft	9 ft	9 ft
Bag Length	Silage Length (ft)	Capacity (lbs DM)	Silage Length (ft)	Capacity (lbs DM)
100	84	54,900	82	67,800
150	134	88,600	132	109,200
200	184	120,200	182	150,500
250	234	152,900	232	191,900
300	284	185,600	282	233,200
Bag Diameter	**10 ft**	**10 ft**	**12 ft**	**12 ft**
100	80	81,700	76	111,700
150	130	132,700	126	185,300
200	180	183,800	176	258,800
250	230	234,800	226	332,300
300	280	285,900	276	405,000

Load Capacity of Wagons

DEPTH FEET:	Approx. Tons at 70% Moisture Length (ft)			
	14	16	18	20
5	6.6	7.5	8.5	9.5
6	7.9	9.0	10.0	11.0
7	9.2	10.2	11.7	13.0
8	10.5	11.8	13.1	14.5

DEPTH FEET:	Approx. Tons at 65% Moisture Length (ft)			
	14	16	18	20
5	6.0	6.8	7.7	8.6
6	7.2	8.2	9.2	10.3
7	8.4	9.6	10.8	12.0
8	9.6	11.0	12.3	13.7

DEPTH FEET:	Approx. Tons at 60% Moisture Length (ft)			
	14	16	18	20
5	5.5	6.1	6.8	7.5
6	6.5	7.3	8.2	9.0
7	7.5	8.5	9.5	10.5
8	8.5	9.6	10.8	12.0

DEPTH FEET:	Approx. Tons at 55% Moisture Length (ft)			
	14	16	18	20
5	4.6	5.3	5.9	6.6
6	5.5	6.3	7.1	7.9
7	6.5	7.4	8.3	9.3
8	7.4	8.5	9.6	10.7

DEPTH FEET:	Approx. Tons at 50% Moisture Length (ft)			
	14	16	18	20
5	4.0	4.6	5.3	6.0
6	5.0	5.7	6.3	7.3
7	5.8	6.6	7.5	8.4
8	6.5	7.5	8.5	9.5

Application & Applicators

Low Volume

The DE-1008.5 is designed exclusively for liquid concentrate application on forage harvesters. It stands out with its stainless steel baseplate and enclosure, featuring a hinged door to gain access to an updated pump and a quick-connect pumping tube – meaning no tools required for tube changes! The flush bottle is larger and is part of the pump enclosure. We have also improved the wire harness and electrical plug connection to the pump unit to make it a more secure, weather-tight connection. As with previous Dohrect Enject Systems, it has an open-end discharge (no nozzle or orifice to plug), an insulated tank (treating up 1000 tons per tank fill), and a secondary tank option (to have more on the go).

High Volume

- 100 gallon tank and frame
- 3.0 GPM self priming pump
- Self-fill system
- 3 nozzle assembly with 20’ of hose
- Pressure regulation system with stainless steel gauge
- 37’ power cord (pre-terminated)
- On-off switch
- In-line gauge

Stationary

The DE-8 is an ideal applicator for forage blowers and baggers (stationary application.)

- Hangs on the side of a 55 gallon drum (drum not included).
- 2.0 GPM self priming pump.
- Single nozzle assembly (4 - 72 oz. per minute) with 20’ of hose.
- 15’ power cord with battery clips.
- On-off switch mounted on applicator.

Consult with your Pro Sile representative for more information and questions about applicators.

ProSile

Crop Cure

FormAFeed

740 Bowman Street, Stewart, MN
800.422.3649 – www.formafeed.com

Rev. 111918