

RENK SEED INOCULANT PROGRAM	FORAGE ENHANCER				HIGH MOISTURE CORN/ CORN SILAGE	
	FS370 DF	MT550CL	FS320WS	FS340WS	HMC 780 B	HMC 790 B
<b>ACTIVE INGREDIENTS</b>	<i>Lactobacillus plantarum</i> <i>Pediococcus acidilactici</i> <i>Pediococcus pentosaceus</i> <i>Streptococcus Faecium</i> <i>Lactobacillus brevis</i>  Enzymes: Carbohydrase enzymes	<i>Bacillus subtilis</i> <i>Lactobacillus plantarum</i> <i>Pediococcus acidilactici</i> <i>Pediococcus penntosaceus</i> <i>Streptococcus faecium</i>  Enzymes: Dried <i>Aspergillus niger</i> fermentation extract Dried <i>Bacillus subtilis</i> fermentation extract	<i>Lactobacillus plantarum</i> <i>Pediococcus acidilactici</i> <i>Pediococcus pentosaceus</i> <i>Streptococcus Faecium</i> <i>Lactobacillus brevis</i>  Enzymes: Carbohydrase enzymes	<i>Lactobacillus plantarum</i> <i>Pediococcus acidilactici</i> <i>Pediococcus pentosaceus</i> <i>Streptococcus Faecium</i> <i>Lactobacillus brevis</i>  Enzymes: Carbohydrase enzymes	<i>Lactobacillus buchneri</i> <i>Pediococcus pentosaceus</i>	<i>Lactobacillus buchneri</i> <i>Pediococcus pentosaceus</i>
<b>CFU/G OF CROP APPLIED</b>	150,000	200,000	150,000	150,000	HMC: 750,000 CS: 500,000	
<b>APPLICATION RATE</b>	50 lbs @ half lb/ton = 1 bag treats 100 tons	1000 grams @ 2 grams/ton = 1 pouch treats 500 tons	100 grams @ 1 gram/ton	500 grams @ 1 gram/ton	HMC: 250 grams @ 7.5 grams per ton = 1 pouch treats 33 tons CS: 250 gram pouch treats 50 tons	HMC: 1000 grams 1 pouch treats 133 tons CS: 1000 gram pouch treats 200 tons
<b>CROP TYPE</b>	All crops	All crops. When forages are close to the upper limit for recommended moisture content.	All crops	All crops	HMC and CS	HMC and CS
<b>MIXING RATE</b>	Half lb/ton	2 grams/ton	Mix w/water 1 gram/ton	Mix w/water 1 gram/ton	Mix w/water HMC: 7.5 grams/ton CS: 5 grams/ton	Mix w/water HMC: 7.5 grams/ton CS: 5 grams/ton
<b>OPTIMAL CROP MOISTURE</b>	Haylage: 55%-65% CS: 60%-70%				HMC: 28%-32% CS: 60%-70%	

HMC=High Moisture Corn CS=Corn Silage DF=Dry Forage WS=Water Soluble

## KNOW YOUR NEEDS

### BUNKER CAPACITY

Depth (ft)	Bottom Width (ft)						
	20	30	40	50	60	70	80
8	3.4	5.0	6.5	8.1	10.0	11.3	13.0
10	4.3	6.2	8.5	10.2	12.2	14.2	16.2
12	5.2	7.5	10.0	12.3	14.6	17.0	20.0
14	6.0	8.7	11.5	14.3	17.0	20.0	22.7
16	7.0	10.0	13.1	16.3	20.0	22.7	26.0
18	8.2	11.1	14.7	18.3	22.0	27.6	29.1

(tons/foot of length) \*D=40 lb/ft<sup>3</sup> and 70% moisture

### BAG CAPACITY

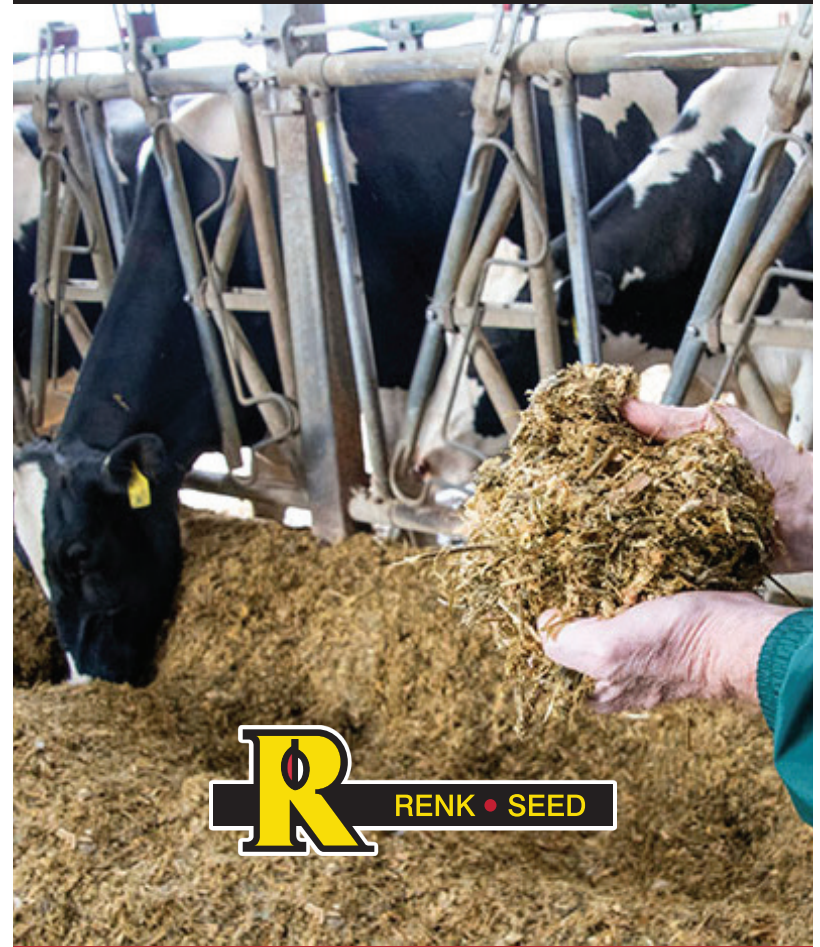
Diameter (ft)	8	9	10	11	12	14
Tons per running ft	1	1.25	1.5	1.75	2.25	3



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6809 Wilburn Road | Sun Prairie, WI 53590

# ADVANTAGE

## SILAGE FERMENTATION ENHANCER



**SUPERIOR SILAGE AND HIGH-MOISTURE CORN INOCULANTS FOR DAIRY AND BEEF CATTLE**

## WHY WE HANDLE FORAGE CROPS THE WAY WE DO

Once a forage crop is cut or harvested, the degradation of the crop begins. A slew of yeast, molds, and bacteria will begin feeding on the crop until there is nothing left. So how do we minimize this? Most of the 'bad' yeast, mold, and bacteria require oxygen to fuel their feeding. Take that away and they will be neutralized. That is why we ensile, using compression to force as much air out and seal it from the outside to prevent more from getting in.

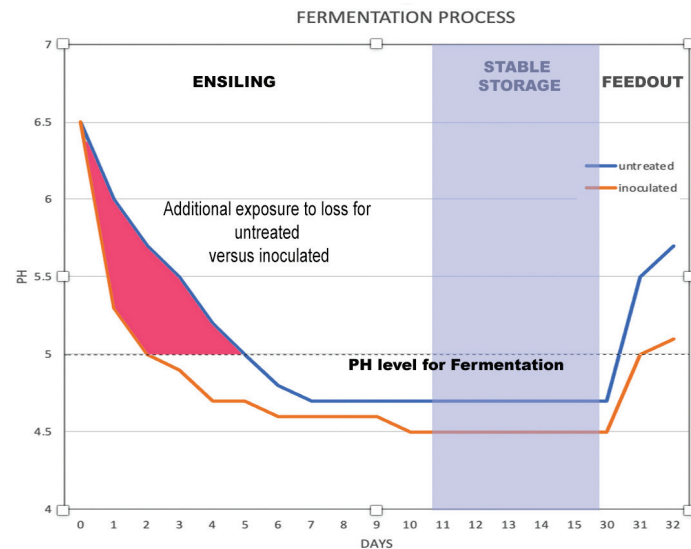
Once all the oxygen is consumed, the environment becomes anaerobic (free of oxygen) and only certain organisms can function in this condition—this is commonly called fermentation. Feeding continues but now the system is closed—the nutrients are still there but transformed into different structures. As long as the animal can digest them, there is minimal loss of nutrients. The other little secret is the yeast and bacteria are good at keeping other strains from competing, either by out reproducing or generating harmful byproducts that others can't handle.

A good example of this is the production of alcohol. Yeast is used to feed on available sugars and convert it to alcohol. The same calories still remain (although little is digestible by us) but the presence of alcohol in the mix prevents bacteria from taking over. Fermentation in forage crops works a bit differently. Bacteria that produce lactic acid rapidly drop the pH, which prevents yeast from functioning.

## ADVANTAGE FORAGE ENHANCERS

A family of products that can be used on haylage, silage, and high-moisture corn. Each product contains advanced strains of bacteria and special enzymes tailored to rapidly drop the pH level and shorten the time to fermentation. The quicker the drop in pH, the less exposure the crop will have to nutrient loss. Using Advantage reduces dry matter loss, loss of nutrients, and spoilage—all of which will reduce crop quality and yield. In the graph below, we see the treated forage achieving fermentation in two days instead of five.

We also have several products that will help reduce spoilage on feedout and another to help control Clostridium in the feed. This is in addition to their role in rapid pH drop.



## WHY ADVANTAGE FORAGE ENHANCER IS BETTER

- Contains five strains of bacteria to work in a wide pH and moisture range.
- Applies high level of bacteria per gram of crop 150,000 cfu/g of crop which is above the industry average level of 100,000 cfu/g of crop.
- Combines bacteria PLUS enzymes (most competitors do not include this critical component). Enzymes help break down some of the plant fiber to help the bacteria be more efficient.
- Water-soluble products contain a buffering agent to keep the solution neutral in application tank. This keeps the bacteria viable and prevents settling in tank.
- Advantage Forage Enhancer comes in a dry flowable (FS370DF) and two water soluble (FS320WS and FS340WS) options.

## ADVANTAGE INOCULANTS PAY FOR THEMSELVES

A large part of any savings when using a bacterial inoculant comes from Dry Matter (DM) savings. Here's an example with an average of 5% DM savings:

- 100 head dairy that puts up 1500 tons of corn silage
- Inoculant cost is .75/ton = \$1,125.00

We would only need to save 2.5% DM to cover the cost of the inoculant when corn silage is cheap, and much less when it is pricey!

Put a different way, 5% DM savings would result in 14 more days of high-quality feed from the same acres which equates to an extra two weeks of milk production.

Cost of Corn Silage	Value of Silage Saved
\$40 per ton	\$2,250.00
\$50 per ton	\$3,000.00
\$60 per ton	\$3,750.00
\$70 per ton	\$4,500.00

With simple math:

- 100 cows @ 60 lb milk/day for 14 days = 84,000 pounds of extra milk
- At \$15.00/cwt, that is an extra \$12,600 just from extending the life of our silage
- Accounting for grain, protein, and mineral costs for 60 lbs of milk production at \$3 per day, we subtract (100 cows x \$3 per head per day x 14 days) = \$4,200

**The net gain would be \$12,600 - \$4,200 = \$8,400!**

That is just what you can expect from DM savings alone. You also should have less spoilage and higher quality forage to work with. This can increase animal intake, reduce vet bills and reduce forage loss due to poor quality.

## RENK ADVANTAGE INOCULANTS

### FS320WS and FS340WS

Water soluble inoculant designed to speed ensiling, preserve forage energy and quality. Sold in 100 gram (FS320WS) and 500 gram (FS340WS) foil pouches. Each gram treats one ton of forage.

### FS370DF

Same active ingredients as the FS320WS and FS340WS but delivered in 50 pound dry mixture. Each bag treats 100 tons of forage.

### FS780-B and FS790-B

Contains *Lactobacillus buchneri* bacteria known to produce both lactic and acetic acid. This helps with the initial fermentation, but even more importantly keeps yeast and mold levels low once feed-out starts. This greatly extends bunk life and loss from spoilage.

Water soluble mix sold in 250 gram (FS780-B) and 1000 gram (FS790-B) foil pouches. The 250 gram pouch treats 50 tons of corn silage or 33 tons of high moisture corn. The 1000 gram pouch treats 200 tons of corn silage or 133 tons of high moisture corn.

### ADVANTAGE HMC 780B & 790B

Advantage HMC is a Buchneri-based inoculant that excels in yeast control on feed-out in addition to quick fermentation after harvest. Yeast control on feedout helps to extend bunk life with less crop thrown out due to spoilage or feeding cows partially spoiled forage. In some cases it has been known to reduce somatic cell count in milk. Ideal for high-moisture corn, but does also work with silage.

### ADVANTAGE MT550CL

This is an inoculant that includes scientifically selected lactic acid producing bacteria formulated to drive an efficient fermentation to retain crop nutrients with *Bacillus subtilis* bacteria to manage clostridia growth in forage.

When forage (mostly alfalfa haylage) is ensiled at a high moisture level (>65% moisture) there is a risk the natural clostridia bacteria in the forage could dominate the fermentation and produce butyric acid as a by-product. Haylage with a clostridial fermentation can be identified by high moisture content, dark green appearance and a strong, offensive butyric odor. Since the production of butyric acid by the clostridia is inefficient, dry matter losses tend to be high and poor palatability makes it difficult to meet the energy requirements of early lactating cattle. To compensate for this energy loss, the cow may enter ketosis, where they metabolize large quantities of fat, putting the cow at high risk for disease and reduced milk yield.

The *Bacillus subtilis* bacteria in the MT550CL is scientifically chosen to handle various strains of clostridia bacteria and reduce their negative effects on the haylage and silage harvested at higher moisture conditions. It is highly recommended if you are harvesting under wet and less than ideal conditions.