

## PSI<sup>®</sup> Family of Products

### Use Rates:

#### Dry Granular Product.

#### PSI<sup>®</sup> 165 Dry Granular (50 lb. bags)

- 1 lb per ton for Corn silage
- 1 lb per ton for Grass and Legumes
- 2 lb per ton for High Moisture corn

#### Water Soluble Products

#### PSI<sup>®</sup> 165 Water Soluble

A one half pound pouch treats:

- 50 tons Grass or Legume haylage
- 50 tons Corn silage
- 25 tons High Moisture corn

#### PSI<sup>®</sup> 165 5X Water Soluble

A one pound pouch treats:

- 500 tons Grass or Legume haylage
- 500 tons Corn silage
- 250 tons High Moisture corn

#### PSI<sup>®</sup> Buchneri Water Soluble

A one pound Water Soluble pouch treats:

- 100 tons Corn or Legume haylage
- 100 tons High Moisture Corn

**Storage and Handling:** PSI<sup>®</sup> Inoculants should be stored in a cool, dry place out of direct sunlight. Follow label mixing instructions.

## PSI<sup>®</sup>

### Premium Silage Inoculant

PSI<sup>®</sup> 165 is a blend of *Lactobacillus plantarum*, *Enterococcus faecium*, *Pediococcus acidilactici*, *Propionibacterium freudenreichii*, *Bacillus pumilus* and four enzymes (*Amylase*, *Cellulase*, *hemicellulase*, and *Pentosanase*) designed to provide 165,000 cfu/g of silage.

PSI<sup>®</sup> Buchneri contains *Lactobacillus buchneri*, *Lactobacillus plantarum* and *Pediococcus acidilactici*, designed to provide 600,000 cfu/g silage.

### PSI<sup>®</sup> Treated Silage

- ◆ Increases nutrient density of silage.
- ◆ Reduces heating of silage.
- ◆ Speeds fermentation & preservation
- ◆ Increases milk production & intakes.
- ◆ Increases dry matter recovery.
- ◆ Reduces effluent flow.



## PSI<sup>®</sup>

### Premium Silage Inoculant



**Safe Guarding your  
Investment and  
Preserving your Profits!**



All products manufactured by **The Old Mill Troy, Inc.**, are produced in a facility certified in the American Feed Industry Association's Safe Feed/Safe Food Certification Program. **For details go to [www.afia.org/sfsf](http://www.afia.org/sfsf)**

## Management Tips for Producing Quality Silage

Critical management steps required to produce high quality silage are:

- 1) Raising a quality crop
- 2) Harvesting at the optimal plant maturity.
- 3) Apply **PSI**<sup>®</sup> silage inoculant.
- 4) Efficiently compact silage.
- 5) Cover bunker silo's with white plastic.
- 6) Maintain security of silo
- 7) Pitch any spoilage

### Raising a High Quality Crop

Raising a high quality crop for silage, starts with hybrid selection, optimizing fertility, weed and insect control programs, and harvesting at the correct maturity. However, once a crop loses quality little can be done to improve the nutrient content of the silage, regardless of the additive or treatment used.

### Harvest at Optimal Plant Maturity

The optimal crop maturity target for chopping depends on the silage crop grown, plant moisture and storage structure.

**Corn Silage :** Whole plant moisture evaluation together with kernels at 1/2 milk line to black layer should be used to evaluate when to chop.

### **Storage Structure      Whole Plant Moisture**

Upright Silo	60 - 65%
Upright Oxygen Limiting	50 - 60%
Bunker Silo	65 - 70%

Ag-Bag	60 - 70%
<b>Growth Stage for harvest continued:</b>	
Small Grains	Boot to Dough Stage
Perennial Grasses	Boot Stage
Alfalfa	Bud Stage
Alfalfa-Grass	Boot Stage for Grass

**Remember to keep the cutter blades sharp.**

### Inoculation

Ideally **PSI**<sup>®</sup> should be applied at the chopper. **PSI**<sup>®</sup> contains a scientifically designed blend of lactic acid producing bacteria and enzymes. The bacteria in **PSI**<sup>®</sup> are homofermentative bacteria which are the most efficient in converting sugars to lactic acid (One unit of glucose produces 2 units of lactic acid). This fermentation efficiency results in more nutrients being preserved for the nutrition of livestock, than **heterofermentative bacteria** which are significantly less efficient in converting sugars to lactic acid (One unit of sugar produces one unit of lactic acid, a unit of ethanol and one unit of carbon dioxide).

The **PSI**<sup>®</sup> bacterial profile results in a rapid drop in silage pH which reduces the growth of undesirable organisms, limits heating and preserves silage nutrients. The lactic acid bacteria in **PSI**<sup>®</sup> initiate a cascade of lactic acid production starting with *Bacillus pumulis* a unique oxygen consuming bacteria that enables *Enterococcus faecium* (known as the silage fermentation starter) and *Pediococcus acidilactici* which creates the conditions for *Lactobacillus plantarum* responsible for the lowering the pH to around 4. *Propionibacterium freudenreichii* produces metabolites that inhibit mold growth.

Optimally the total organic acid content of quality silage should be between 8 and 12 percent of dry matter. The ratio of lactic acid to acetic acid should be greater than 2:1.

### Packing & Covering Silage

Eliminating and keeping oxygen from the silage is critical in reducing nutrient losses, heating and ensuring that the silage preservation occurs with the desired profile of organic acids. Quickly filling, packing, and covering silos with white plastic and tires to minimize the crops exposure to oxygen is critical since fermentation starts as soon as the crop is cut. The presence of oxygen in a silo will result in the growth of yeast, molds, and deleterious bacteria that reduce the nutrients in the silage and may produce toxins that are harmful to livestock.

### Maintain Security of Silo & Pitch Spoilage

Keeping the silo or bunker tightly sealed is critical to maintaining the quality of silage treated with **PSI**<sup>®</sup>. Bagged silage should be checked regularly for damage from vermin and equipment. Fix any damage immediately with "air tight" tape. When removing silage from a bunker or bag minimize the area exposed to air by keeping a clean face on the silage and pitch spoilage.

