LIRA GOLD® Fact Sheet: Lira Gold® Silage Inoculants

When used in conjunction with "sound" silage making practices, **Lira Gold® Silage Inoculants** reduce energy and protein loss, control heating at ensiling and spoilage at feed out, and help to ensure forage consistency and palatability. **Lira Gold® Silage Inoculants** contain a "team" of homofermentative lactic acid-producing bacteria (LABs) selected for their abilities to aggressively produce lactic acid across a wide range of environmental and crop conditions. Three digestive enzymes help provide fuel for the team of bacteria until reaching final pH.

- **Bacillus subtilis** – competes with yeast and mold, uses oxygen to enhance growth of LABs.
- **Pediococcus pentosaceus** – active at cooler temperatures down to 59 degrees.
- **Enterococcus faecium** – first bacterium to produce lactic acid.
- **Lactobacillus strains** – key "finisher" bacteria, active to pH < 4.0.
- **Purified digestive enzymes** – "liberate" sugars to fuel bacterial growth.

Frequently asked questions:

High quality silage is critically important to dairy nutrition and profitable milk production. The goal of making high quality silage is to maximize the preservation of nutrients and enhance the nutrient profile from the original crop.

How do Lira Gold® Silage Inoculants work?

- Beneficial bacteria efficiently convert plant sugars into lactic acid. Lactic acid is a strong organic acid that quickly and safely lowers forage pH to <4.5 on legume/grass haylage and to <3.8 on corn/sorghum silage. Low pH inhibits the growth of many undesirable organisms and shuts down fermentation faster; thus, preserving more valuable nutrients in the ensiled crop. Enzymes are added to provide more food from the forage to fuel robust bacterial growth and drive pH down quickly.

What makes Lira Gold® Silage Inoculants different from other inoculants?

- The specific bacteria used in LIRA GOLD Silage Inoculants are micro-encapsulated with enzymes and a starch source in order to ensure they are viable and active when you are ready to use the product. The food source and soluble carbohydrate capsule provides a readily available source of food for aggressive and rapid bacterial growth in silage.

Can the benefits of using Lira Gold® Silage Inoculants be measured?

Numerous research studies have demonstrated the following benefits on-farm of using silage inoculants:

- Higher energy density (.03 to .05 Mcal/lb.) of forage dry matter when inoculant is used.
- Inoculated silage has fewer molds and stays cooler at feed-out; therefore, enhancing palatability.
- During conditions of excess moisture, inoculated forages have less seepage.
- On average, total forage dry matter will be enhanced 5% by inoculating.
- Rapid drop in pH results in less degradation of true protein, resulting in production of less ammonia.

Is water-soluble more effective than a dry form of inoculant?

- When forage is ensiled at ideal moisture (60 to 70%), both forms are effective.
- If forage is less than 50% moisture, the water-soluble inoculant will out-perform the dry form.

How much does it cost to use a bacterial silage inoculant?

- **Lira Gold® Silage Inoculants** cost approximately 3 cents/cow/day
  (assuming $.87/treated ton of forage, and cows consuming about 24 lbs. of forage DM)
- **Lira Gold® Silage Inoculant** is cost effective nutritional assurance for forage management programs.

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LIRA GOLD® Silage Inoculant 100T-ws

A Microbial Aid to Fermentation of Silage and High Moisture Grains

Guaranteed Analysis:

Lactic Acid Producing Bacteria .....30 Billion Colony Forming Units/gram
(Enterococcus faecium, Bacillus subtilis, Lactobacillus plantarum, Pediococcus pentosaceus, Lactobacillus casei)
Amylase (Aspergillus oryzae) ..... 54 µg starch hydrolyzed/minute/g
Cellulase (Aspergillus niger) ..... 20 µg cellulose broken down/minute/g
Xylanase (Aspergillus oryzae)
..... 30 µg xylans hydrolyzed/minute/g

Ingredients: Maltodextrin, Dried Enterococcus faecium Fermentation Product, Dried Bacillus subtilis Fermentation Product, Dried Lactobacillus plantarum Fermentation Product, Dried Pediococcus pentosaceus Fermentation Product, Dried Lactobacillus casei Fermentation Product, Dried Aspergillus oryzae Fermentation Extract, Dried Aspergillus niger Fermentation Extract, Sodium Aluminosilicate.

Directions for use: Dissolve contents of package in 100 quarts of cool, clean water. Spray mixture uniformly over silage at the rate of one quart per ton. Use mixture within twelve hours for best results.

Notice: Due to the many variables beyond our control, Daniel Baum Company, Inc. makes no warranties, expressed or implied, concerning this product or its use, beyond the description on the face hereof. In no event shall Daniel Baum Company, Inc. be responsible for consequential or incidental damages.

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Lot No:

Net Weight 16 oz (454 g)

LIRA GOLD® NUTRITIONAL SOLUTIONS FOR HEALTH & PRODUCTIVITY

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Store in a cool, dry place out of reach of children

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LIRA GOLD® Silage Inoculant

A Dry Microbial Aid For Fermentation of Silage, Grasses and High Moisture Grains

Guaranteed Minimum Analysis:

Lactic Acid Producing Bacteria..... 136 billion Colony Forming Units/lb
(300 million Colony Forming Units/g)
(Enterococcus faecium, Bacillus subtilis, Lactobacillus plantarum, Pediococcus pentosaceus, Lactobacillus casei)
Amylase (Aspergillus oryzae) .....240 µg starch hydrolyzed/minute/lb
Cellulase (Aspergillus niger) ..... 85 µg cellulose broken down/minute/lb
Xylanase (Aspergillus oryzae) ..... 135 µg xylans hydrolyzed/minute/lb

Ingredients: Ground Limestone, Rice Hulls, Magnesium Oxide, Mineral Oil, Sodium Calcium Aluminosilicate, Dried Enterococcus faecium Fermentation Product, Dried Bacillus subtilis Fermentation Product, Dried Lactobacillus plantarum Fermentation Product, Dried Pediococcus pentosaceus Fermentation Product, Dried Lactobacillus casei Fermentation Product, Dried Aspergillus oryzae Fermentation Extract, Dried Aspergillus niger Fermentation Extract.

Use Directions: Cut and wilt forage during favorable weather conditions. Harvest forage or grain at ideal maturity and at the proper moisture levels:

Corn and Sorghum Silage 60-75%
Haylage and Small Grain Silage 55-70%
High Moisture Grains (ground ear, rolled or cracked).....28-32%

Always use a moisture meter if possible. Chop to optimum length (1/4 to 3/8 inch cut). For lower moisture silage, a finer chop is needed to ensure better packing. Add ***LIRA GOLD® SILAGE INOCULANT*** uniformly at proper usage levels. Ensile the forage as quickly as possible. Pack well and seal or cover securely.

Usage Levels:

Corn and Sorghum Silage....1 lb/ton ...Inoculation rate - 150,000 Colony Forming Units/gram of forage
Haylage (alfalfa).....1 lb/ton ...Inoculation rate - 150,000 Colony Forming Units/gram of forage
Grass Silage .....1 lb/ton ...Inoculation rate - 150,000 Colony Forming Units/gram of forage
(clover, timothy, brome, orchard)
Small Grain Silage .....1 lb/ton ...Inoculation rate - 150,000 Colony Forming Units/gram of forage
(oats, wheat, barley, rye)
High Moisture Grain.....2 lb/ton ...Inoculation rate - 300,000 Colony Forming Units/gram of forage
(ground ear, rolled or cracked)

Types of Application: With metering device; spreading over the top of each forage load prior to unloading into the blower or elevator; or spreading on forage as it fills the silo, bunker or storage facility.

Storage: Store product in a cool, dry area for maximum stability. Avoid leaving bag opened for any extended period of time. This product is intended as a source of lactic acid producing bacteria and enzymes only.

Buyer assumes all responsibility of use, storage and handling of this product. Daniel Baum Company, Inc. makes no other claims or warranties expressed or implied.

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Net Weight: 50 lb (22.68 kg)

Lot No:

Manufactured for:

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CAPACITY OF TRENCH OR BUNKER SILOS

(TONS PER FOOT OF LENGTH)

Bottom Width In Feet	Depth in feet				
	8.0	10.0	12.0	16.0	20.0
20	3.1	4.0			
30	4.6	5.9	7.1	9.6	
40	6.1	7.7	9.3	12.6	16.0
50	7.6	9.6	11.6	15.6	19.8
60		11.5	13.8	18.6	23.6
70			16.1	21.6	27.4
80			18.3	24.6	31.0
100				30.6	38.6

CAPACITY OF UPRIGHT SILOS (TONS)

SIZE (Diameter X Height)	APPROXIMATE MOISTURE CONTENT Corn Silage and Haylage			Cracked Shelled Corn	Ground Ear Corn
	70%	60%	50%	30%	32%
12x30	70	52	42	80	69
12x40	106	80	64	106	91
12x50	147	110	88	133	114
14x30	96	72	58	109	93
14x40	145	110	88	145	124
14x50	200	150	120	101	156
14x60	260	195	156	218	187
16x30	125	95	76	142	122
16x40	189	142	114	189	163
16x50	261	195	156	237	203
16x60	341	255	204	284	244
18x40	239	180	144	239	205
18x50	330	247	198	299	257
18x60	430	322	258	359	308
18x70	539	405	324	420	360
20x40	295	222	170	296	254
20x50	407	305	244	370	317
20x60	529	397	318	443	381
20x70	660	495	396	517	444
22x40	358	267	214	358	307
22x50	492	370	296	447	384
22x60	640	480	384	537	461
22x70	790	592	474	626	538
24x50	583	437	350	532	457
24x60	760	570	456	638	548
24x70	948	710	568	745	640
24x80	1136	852	682	851	731
26x50	688	515	412		
26x60	910	682	546		
26x70	1143	857	686		
26x80	1389	1042	834		
28x60	1030	772	618		
28x70	1275	957	766		
28x80	1389	1042	834		
30x50	913	685	548		
30x60	1190	892	714		
30x70	1470	1102	882		
30x80	1764	1322	1058		