

# GRO-TEC PLATINUM PLUS

## GUARANTEED ANALYSIS

Crude Protein, Min.....	16.00%
Crude Fat, Min.....	0.50%
Crude Fiber, Max.....	2.00%
Niacin, Min.....	170 ppm
Pantothenate, Min.....	30 ppm
Riboflavin, Min.....	25 ppm

## INGREDIENTS

, Brewers Dried Yeast, Calcium Montmorillonite, Dried Whey, Sodium Bentonite, Soybean Oil, Calcium Carbonate, Extracted Citric Acid Presscake, Silicon Dioxide, Yucca Schidigera Extract, Active Dry Yeast, Aluminum Calcium Silicates, Dried Lactobacillus acidophilus Fermentation Product, Dried Lactobacillus lactis Fermentation Product, Dried Lactobacillus planetarium Product, Dried Enterococcus cermoris Fermentation Product, Dried Enterococcus dicetylactis Fermentation product, Extracted Fermentation Meal, Dried Fermented Corn Extractives and Dried Yeast, Dried Extracted Fermentation Solubles Niacin Supplement, Vitamin B12 Supplement, Roughage Products, Yeast Culture, Dried *Aspergillus oryzae* Fermentation Extract, Dried *Bacillus licheniformis* Fermentation Extract, Dried *Bacillus subtilis* Fermentation Extract, Calcium Pantothenate, Riboflavin Supplement, Menadione Sodium Bisulfite Complex (source of Vitamin K activity), Mineral Oil, Biotin and Thiamine Mononitrate.

## FEEDING DIRECTIONS

Ruminants	3-4 oz. head/day
Pigs, Sheep, Horses, Chickens	1-3 oz. head/day

Mix five to twenty-five pounds (5-25 lbs.) of PLATINUM PLUS in a ton of complete formula for livestock feeds.

**Manufactured By  
GRO-TEC, INC.  
10324 W US HWY 36  
MODOC, IN 47358**

NET WT 50 LB (22.7 kg)

LOT#

# PLATINUM PLUS

Platinum Plus from Gro-Tec is the result of over 30 years of University testing and Field trials. Platinum plus is a special blend of ingredients that eliminates the need to buy three different products: Yeast, Probiotic, and anti-toxin products (manna, cell wall). Platinum Plus is effective at creating high producing dairy cows, easing the transition of incoming feedlot cattle by maximizing their ration, and improving the yield of brood cows and calves on marginal pasture, under stress from high temperatures.

*Platinum Plus is a combination of concentrated sources of selected viable cultures, micro-organisms, and yeast, manna cell wall, and gluten. Carrier with a general application for Swine, Dairy Cows, Beef Cattle, Horses, Sheep and Poultry.*

## CONCEPT

Digestion of nutrient in the ruminant animal depends upon the micro flora resident in the rumen. The microbial population is complex yet allows the animal to thrive on fibrous material which is otherwise undigestible. There are two major groups of microorganisms within the rumen: bacteria, with a viable count of about  $10^{10}$  per mL of fluid; and protozoa with a viable count of about  $10^6$  per mL. The rumen is quite efficient in the presentation of nutrient to the animal. About 70-85% of the ingested dry matter is degraded. The microorganisms degrade plant polysaccharides and form volatile fatty acids (VFA's), primarily acetic (60-70%), but some propionic acid (15-20%) and butyric acid (10-15%). The VFA's are absorbed in the reticulo-rumen.

## LACTOBACILLUS

Platinum Plus supplies the beneficial bacteria which restores the positive micro flora necessary for a balanced digestive system. These bacteria adhere to gut linings, facilitating digestion, nutrient absorption and combating pathogens. These bacterial strains were selected for their superior ability to: attach to intestinal epithelial tissue, tolerate the gastric environment, tolerate anaerobic conditions, produce abundant lactic acid, and inhibit the growth of harmful bacteria such as E. Coli Salmonella.

## BENEFITS

- Improves feed effectiveness by improving Palatability and Digestion
- Maintains Proper pH by balancing gut micro flora
- Lowers the Effects of Toxins in the Rations
- Minimizes Stress
- Increases Milk Production by 1.5-2 pounds/day
- Improves Viability and Increases Survival Rate
- Improves energy use in low energy diets
- Improves Weight Gain
- Better Egg Quality
- Larger Litters in Pigs

### **ACTIVE LIVE YEAST**

Dry Yeast Research from Scotland (Rowett Institute, where they cloned that famous sheep) which showed the following:

- a. Dry yeast into the rumen is very active in scavenging (feeding on dissolved oxygen in the system).
- b. With a dry yeast there is a strong drop in the level of dissolved oxygen leading to a purer anaerobic fermentation set up in the rumen.
- c. Cellulytic dry yeast bacteria require an anaerobic system, and therefore gets increases in replication, actions of fiber digesting organisms, hence better fiber utilization.
- d. A dry yeast is most effective in high producing cows where fiber content (ADF – WDF) has to be limited. Where you want the most effective use of the fiber is in the high energy ration. A dry yeast in removing oxygen sets up favorable fiber digestion mechanisms in high yielding cows, especially over the 1<sup>st</sup> 120 days of lactation.

### **MICROBIAL ECOLOGY**

The microorganisms themselves become a major nutrient source for the ruminant. The rumen bacteria and protozoa pass in the abomasum (the true stomach) where acid digestion takes place. The microbial proteins and fats are digested and absorbed in the small intestine. Water is absorbed from the large intestine, cecum, and rumen.

From this brief discussion, it should be clear that disruption of the gastro-intestinal micro flora will have a direct and substantial effect upon the ruminant animal. It should be pointed out, however, that the complexity and varied food web of the microorganisms comprising the rumen flora tends to make the population stable, and more resistant to fluctuations. However, when a perturbation (stress) occurs, and results in an alteration of the microbial flora, then primary digestion of plant fiber may be impaired in the rumen, and the source of protein (the microbes themselves) for the animal may also become depressed. Furthermore, conditions of stress lead to the loss of normal balance of microbes within the gastro-intestinal tract. Not only are microbes necessary in the rumen, but also within the various regions of the intestinal system for normal balanced function.

## **NORMAL BACTERIAL FUNCTION**

The normal function of the bacteria within the intestinal tract involves the absorption of the nutrients through the cell walls of the intestine, the production of vitamins (such as B12 and K), small molecular weight proteins, and the exclusion of undesirable bacteria by attachment to intestinal epithelium. The benefit to the animal host of the presence of normal bacteria is more than likely the result of all the above factors. The true interaction between the host and the bacteria is, of course, more complex than suggested here: but the complete discussion would take up more space.

The attachment of microorganisms is important in the competitive exclusion of potential pathogens and in the establishment of a normal population of helpful bacteria. (The bacteria used in Platinum Plus are selected for their ability to firmly attach to intestinal epithelium). Normal intestinal mucosa has receptor sites for the binding of adhesions on the bacterial surface. Bacteria capable of causing disease can attach at these sites and create mischief. Most pathogenic strains of bacteria create disease where attached; although, some strains of bacteria such as *Staphylococcus aureus*, do so without colonizing the epithelium because of the production of toxins in food or the release of toxin by ingested organisms.

Exclusion of pathogens may also be the result of metabolites produced by, as well as the presence of indigenous bacteria. *Lactobacillus acidophilus* produces substances with antibacterial activity. In fact, some species of *Lactobacillus* have been shown to neutralize the effect of enterotoxin from *Escherichia coli*.

## INDICATIONS FOR USE

Conditions such as stress, starvation or antibiotic therapy can disrupt the normal ecology of the gut resulting in:

- Gastroenteritis
- Diarrhea
- Weight Loss
- Other signs of pathogenesis (disease)

Some of the common enemies of a healthy micro flora include:

- Feeding of low doses of antibiotics which can weaken all bacteria in the digestive tract, helpful and harmful, preventing the positive bacteria from functioning
- Physiological stressing of animals from parturition, weaning, castration, disease, diet changes, and environmental stresses such as crowding and excessive heat, poor ventilation and sanitation.

These put extra physical demands of the animal causing the production of adrenalin and corticosteroids, in turn reducing the protective bacteria of the lower intestine.

The ingestion of viable populations of *Lactobacillus acidophilus* can aid in the reversal of the effects by reestablishing a stable population of intestinal bacteria. An animal in healthy condition is more productive. Consequently, *L. acidophilus* can be a major contributor to health and:

- Assist in feed conversion
- Contribute growth factors
- Protect the host from invasion by intestinal pathogens

Disturbance or removal of the flora, for example by antibiotics, increases susceptibility to colonization by pathogenic bacteria. An additional consequence of oral antibiotic administration is that commensal and pathogenic bacteria may become resistant to these drugs by mutation or by transferable drug resistance. Both problems are of considerable significance to animal and public health.

## **SLECTION CRITERIA FOR PLATINUM PLUS**

The bacteria in Platinum Plus have been carefully selected for their ability to survive introduction into the animal and colonize the intestinal epithelium. All the individual cells of *L. acidophilus* in Platinum Plus will perform each of the requirements of:

- Tolerance to low acidity (pH) found in the stomach
- Tolerance to low redox (very anaerobic) of the rumen
- Tolerance to digestive fluids such as bile (conjugated and unconjugated)
- Competitive toward opportunistic or pathogenic bacteria
- Ability to colonize or attach to intestinal epithelium

## **Viability**

The bacteria are produced under strictly controlled conditions. Genetically stable strains of *L. Acidophilus* are produced by fermentation and harvested at peak performance. They are then enveloped within a protective matrix and freeze-dried, and stored in air limiting, light-limiting, vials. This processing insures long term viability and performance.



**ASPERGILLUS ORYZAE** - Helps treat intestinal disorders, helps breakdown certain fibers and grains. Tends to lower the risk of cardiovascular problems.

**ASPERGILLUS NIGER** - It is derived from a soil saprode with a wide array of hydrolytes and oxidative enzymes involved in the breakdown of plant lignocellulose, degrading fiber, and has molecular mechanisms critical to fermentation process.

**BACILLUS SUBTILLUS** - Works as kind of a fungicidal while not being a true fungicidal, it colonizes the "root" system of the bacteria leaving no way for the fungal organisms to grow. It is also beneficial in de-sizing fiber and starches making them more readily available for digestion.

The combination of these digestive enzymes activity has shown to increase fiber digestion by as much as 50%.  
(more cows per acre ??)

**ACTIVE DRY YEAST** - A form of yeast that is dehydrated granules that are alive but dormant by the lack of moisture. It speeds up digestion allowing more feed to be digested in a shorter time. (more digestion-more consumption)



# **BENEFITS OF PLATINUM PLUS**

- Increases Milk Production<sup>1</sup>
- Lowers Somatic Cell Count<sup>1</sup>
- Lowers Body Temperature<sup>2</sup>
- Increases Gain<sup>2</sup>
- Improves Feed Conversion in Brood Cows<sup>2</sup>
- Lowers toxin level in cows being fed feeds containing toxins<sup>2</sup>
- Increases Feed Intake<sup>3</sup>
- Increases Gain on Feedlot Cattle<sup>3</sup>

More studies are still on going, with more information to be released in the near future!

1 – Texas Tech University

2 – Morehead State University

3 – Commercial Trials

# GRO-TEC

## PLATINUM PLUS CONCENTRATE

### GUARANTEED ANALYSIS

Crude Protein, Min.....	17.00%
Crude Fiber, Max.....	2.00%
Niacin, Min.....	510 ppm
Pantothenate, Min.....	90 ppm
Riboflavin, Min.....	75 ppm

### INGREDIENTS

, Brewers Dried Yeast, Calcium Montmorillonite, Dried Whey, Soybean Oil, Extracted Citric Acid Presscake, Silicon Dioxide, Yucca Schidigera Extract, Active Dry Yeast, Aluminum Calcium Silicates, Dried Lactobacillus acidophilus Fermentation Product, Dried Lactobacillus lactis Fermentation Product, Dried Lactobacillus planetarium Product, Dried Enterococcus cermoris Fermentation Product, Dried Enterococcus dicetylactis Fermentation product, Extracted Fermentation Meal, Dried Fermented Corn Extractives, Dried Extracted Fermentation Solubles Niacin Supplement, Vitamin B12 Supplement, Roughage Products, Yeast Culture, Dried *Aspergillus oryzae* Fermentation Extract, Dried *Bacillus licheniformis* Fermentation Extract, Dried *Bacillus subtilis* Fermentation Extract, Calcium Pantothenate, Riboflavin Supplement, Menadione Sodium Bisulfite Complex (source of Vitamin K activity), Mineral Oil, Biotin and Thiamine Mononitrate.

### FEEDING DIRECTIONS

Ruminants	0.5-1.5 oz. head/day
Pigs, Sheep, Horses, Chickens	0.5-1 oz. head/day

Mix one and a half to eight pounds (1.5-8 lbs.) of PLATINUM PLUS CONCENTRATE in a ton of complete formula for livestock feeds.

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