



Beef Tech-Line



November 2009

A Fresh Look at an old Product – GAINPRO®

In today's markets we have to be more aware of feed utilization than ever before. In the cattle industry we must maximize performance and reduce feed costs to improve the profitability of our operations. GAINPRO® is a feed additive that offers excellent performance at less cost. It is approved for increased rate of weight gain and improved feed efficiency in feedlot cattle.

To better understand how GAINPRO® works, let's review rumen digestion. The rumen functions as a continuous flow fermentation vat. Feed consumed is broken down by bacteria and converted into volatile fatty acids (VFA's) which are used as an energy source. The three primary volatile fatty acids are acetate (acetic acid), butyrate (butyric acid) and propionate (propionic acid). These VFA's meet about 70-80% of the energy needs of the animal. The remainder (20-30%) is met from microbial cell digestion and feed that escapes rumen fermentation. Acetic acid is the most predominant acid, especially with animals on high roughage diets. Methane is a major by-product of acetic and butyric acid production which results in losses of dietary energy. Propionic acid is the most efficient VFA at converting feed into energy. This is due to less waste gas (methane) production. Propionic acid is directly utilized as energy or can be converted to glucose in the liver. Bottom line: the higher the concentration of propionic acid, the more energy we capture from the same amount of feed.

Rumen Bacteria

Two main types of bacteria are present in the rumen – gram positive and gram negative bacteria. Gram positive bacteria primarily produce acetate, lactate and methane. Gram negative bacteria primarily produce propionate and acetate.

How does GAINPRO® work?

GAINPRO® increases the useable energy available to the animal by altering the microbial populations in the rumen to produce more propionic acid. GAINPRO® also has a positive effect in the small intestine, increasing nutrient (amino acid) absorption.

What makes GAINPRO® unique?

GAINPRO® is structurally different from other feed additives currently available. GAINPRO® is a significantly larger molecule than Rumensin and Bovatec®. GAINPRO's molecular weight is 1582; Rumensin has a molecular weight of 692 and Bovatec's molecular weight is 591. Because of GAINPRO's size, it is not absorbed from the gastrointestinal tract and therefore has activity in the rumen and small intestine only.

GAINPRO® - Safety first

There is no slaughter withdrawal time associated with the use of GAINPRO®. Safety tests confirm no abnormalities associated with the use of GAINPRO® in cattle, swine, broiler chickens and turkeys. GAINPRO® has little toxicity in cattle or other species and while not approved for use in horses, GAINPRO® does not have the equine safety concerns present with ionophores. GAINPRO® degrades rapidly in the soil and is not absorbed by plants fertilized with Bambermycin containing manure.

GAINPRO® is available as a medication option in all beef and dairy-beef supplements designed for feedlot cattle.

Feeding Rate and Performance Response

GAINPRO® is approved to be fed at 10-20 mg per head per day. Research indicates that GAINPRO® improves weight gain in high concentrate diets by 3.9% and feed efficiency by 2.5%.

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Dairy-Beef Research Results

Holstein steers were fed via a self-feeder a diet that contained 62.5% medium rolled corn, 35% dry distillers grains and 2.5% supplement or 70% medium rolled corn, 25% corn gluten pellets along with 5% supplement. Both diets supplied approximately 20 mg of GAINPRO®/head/day.

	DDGS	GLUTEN
Start Wt.	229.2	238.8
Finish Wt.	1351.2	1355.5
Days on Feed	330	354
ADG	3.4	3.15

University Research – Angus crossbred cattle (South Dakota State University)

Approximately 256 steers were bunk fed a ration containing (dry matter basis) 25% dry rolled corn, 26% high moisture corn, 30% modified distillers grains, 10% corn silage and 9% supplement containing either GAINPRO® (20 mg/hd/d) or Rumensin (380 mg/hd/d) + Tylan (90 mg/hd/d). Steers were fed for approximately 130 days.

	GAINPRO®	Rumensin/Tylan
Start Wt.	924	921
Finish Wt.	1380	1338
Days on Feed	130	130
ADG, lbs	4.1	3.73
Dry matter intake, lbs	27.7	26.5
Feed:Gain	6.76	7.1

Cost?

The cost of GAINPRO® is less than the cost of Rumensin or Bovatec®. Consult your Hubbard representative for an exact cost comparison.

What about pasture and lower energy rations?

GAINPRO® was originally positioned as a feed additive approved for increased rate of weight gain in pasture, slaughter, stocker, feeder cattle and dairy and beef replacement heifers. GAINPRO® is still effective for those applications.

Summary

Beef feedlot nutrition has been transformed by the increased availability of distillers grains. GAINPRO® is another tool that can be used in corn coproduct based diets as well as other diets to maximize performance and decrease costs.

