

SECOND QUARTER 2007

CALCIUM

Feed-grade calcium products are available in a wide variety of particle sizes, from liquid suspendable products to large particle products for laying hen diets.

DICALCIUM PHOSPHATE

Both 18.5% and 21% phosphorus products are available.

SODIUM BENTONITE

Bentonite products are available in a wide variety of particle sizes suitable for any purpose.

POTASSIUM

ILC Resources has both potassium chloride (KCl) and potassium magnesium sulfate (K/Mg/S) available.

All products are available in both bag and bulk.



ILC's "Take" on Distillers' Grains and CaCO₃

Seemingly endless written articles and podium presentations in the past nine months have focused on either wet or dry *distillers' grains* (DGs). Past research and ongoing study address how best to feed and obtain optimum results from the use of DGs. Our purpose here is not to offer new insight on the feeding value of DGs, but to explore its vital interaction with calcium.

ILC Resources has participated in academic research examining potential benefits of treating DDG-S (*distillers' dried grains with solubles*) with CaCO₃ to improve flowability. Ongoing interest and need suggest that additional experimentation might lead to a potential application. But, aside from this potential, CaCO₃ may have additional nutritional applicability when fed with DGs.

Questions and concerns exist about the feeding value of DGs—wet or dry—in diets for livestock and poultry. There are significant differences among species, especially between monogastrics and ruminants. Most proponents—whether researchers, nutritionists, or feeders—believe these issues can be answered.

One issue to be addressed: DGs bring added phosphorus (P) into livestock and poultry feeding. This may be good or bad, depending on other dietary considerations. Will additional P from this source be beneficial or will it be detrimental? Will feeding DGs force P to become an environmental pollutant or will it simply replace other, perhaps more expensive, sources of P supplementation? Research and close study will provide the guidance needed.

An undeniable fact about added dietary P—potentially in excess of nutritional requirements—is its interaction with other nutrients. Principally, one must consider its vital interaction with calcium (Ca). It's proven that after dietary requirements are met, nearly all species perform optimally at an approximate ratio of 2:1 Calcium to Phosphorus. If diets exceed P requirements while maintaining Ca requirements, a major disruption to an ideal 2:1 ratio will likely occur.

Our company is obviously in the Ca business. However, we would be the first to bring attention to proper and justifiable use of supplemental calcium in dietary considerations. As we experience greater inclusions of DGs in

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Safety Of Our Ingredients

“In view of the recent recalls of various pet foods due to the presence of wheat gluten and rice protein concentrate contaminated with melamine, and information revealing that some of this contaminated pet food may have been mixed with feed for pigs and poultry meant for human consumption, manufacturers are encouraged to make sure they have procedures in place that ensure the safety of the ingredients in their products, as well as the safety of the packaging and processing supplies they use. Manufacturers should also verify that their suppliers have such procedures in place.”

That message was sent to food manufacturers in early May by the Food and Drug Administration (FDA) as a reminder of the legal responsibility of ensuring that all ingredients used in products are safe for human consumption.

It prompted ILC Resources to review our existing plan for delivering safe ingredients into the food chain for human consumption. Consistent and constant vigilance is the only responsible course of action. The FDA communication presented its ALERT initiative to raise awareness regarding food defense issues. The ALERT acronym provides questions, and the answers offer guidelines for ensuring minimum risk of intentional food contamination. Here’s what A.L.E.R.T. stands for:

A How can a business **Assure** that its ingredients are from safe and secure sources?

L How can a business **Look** after the security of the ingredients in its plants?

E Can a business be assured of its **Employees** and people trafficking through its facilities?

R Can a business provide **Reports** verifying the security of the products under its control?

T What response is needed if there is a **Threat** at the business’ facilities?

A

All CaCO₃ products are mined and processed under direct company ownership and control, assuring the safety and security of materials. Agreements and close working relationships with affiliated facilities allow assurance on ILC CaCO₃ products provided by them as well.

Outside suppliers of feed ingredients marketed by ILC are under contractual agreements requiring certification of ingredient safety. These products include *feed-grade phosphates, potassium chloride, potassium-magnesium-sulfate, and bentonite* marketed by ILC Resources from quality suppliers.

L

Looking at security measures, ILC Resources has long established high production and product standards on the processing of CaCO₃ and practices strict quality assurance measures verifying adherence. High standards also are required of ingredient suppliers (refer to list above). An existing system of traceability through lot numbering and invoicing records assures tracking of materials being delivered and received. All ingredients accepted for marketing are under ILC authority either within our own transportation system or by specifically designated contract transporters.

Upon arrival at plant locations for pickup of customer orders or ingredient delivery, others have limited access. Only designated traffic is accepted in restricted pathways for unloading or loading purposes. Mining, processing and storage areas are accessed only by ILC company employees and/or identified persons under direct company knowledge and supervision.

E

Employees are bedrock to ILC’s business. Longevity and familiarity are foundational among all plant and office personnel. A self-policing employee workforce ensures knowledge and quick identification of who belongs within our operations and the reporting of who does not.

R

Annually ILC Resources uses its written “Quality Assurance Standards Program” to measure adherence to quality and safety of products. Our company remains fully in compliance with the tenets of the Bioterrorism Act of 2002 that established preparedness and response to acts of bioterrorism. Reported areas of watchfulness include self evaluation of security effectiveness, internal inspections of procedures, and maintenance of records verifying production, storage, and marketing pathways of company business.

T

Should a threat present itself, a well-established internal chain of command at our plants and office headquarters marks our readiness of response. All plant operations are located in smaller communities where relationships and communi-

June is Dairy Month

June marks a month-long salute to dairy that began in 1937. This annual tradition honors the hard work of our nation's dairy farmers and highlights the importance of dairy foods in our diets. With major U.S. health concerns regarding *osteoporosis*, *high blood pressure*, *obesity*, and *colon cancer*, dairy is having an impact.

Osteoporosis rates are high and there's concern that many people (especially teens, women and the elderly) have critically low calcium intakes. Although dairy products contribute nearly three quarters of calcium in the food supply, most people aren't getting enough in their diet. Consuming at least three servings of milk, yogurt or cheese a day is an important step in building strong bones and preventing osteoporosis.

High blood pressure, or hypertension, affects 50 million Americans and is a major cause of heart disease and stroke. A low fat diet—providing 3 servings of low fat dairy products and 8 to 10 servings of fruits and vegetables—significantly lowers blood pressure as much as some medications, especially when combined with a low sodium intake.

Low fat dairy foods, such as milk, yogurt and cheese, may help *control body fat*. According to several recently published studies:

■ Women who consumed the most calcium and ate at least 3 servings of dairy foods per day were 80 percent less likely to be obese than those with the lowest intake.

■ Young women (18-31 years) enrolled in an exercise study who had high calcium intakes gained less weight and body fat than those with lower calcium intakes.

■ High calcium intake was consistently associated with lower body weight across four studies conducted in young, middle-aged and elderly women. Out of fear of fat, dieters tend to mistakenly cut milk from their diet, often reducing their calcium intake. This may be a contributing factor for frequent failures at losing weight.

■ Researchers analyzed the diets of preschool children over a three-year period and found children with higher dairy/calcium intake had lower body fat than those children with lower dairy/calcium intakes. These results are supported by a growing body of research on adults that shows a connection between dairy food consumption and weight loss.

A study published in *The New England Journal of Medicine* showed calcium may help reduce the risk of **colon tumors**. The addition of 1,200 mg of calcium (the amount found in about four servings of milk, yogurt or cheese) to the diets of high-risk patients reduced the return of single adenomas by 19 percent and reduced the total number of adenomas by 24 percent. These findings are consistent with previous research suggesting that nutrients found in milk and other dairy products may reduce the risk of developing cancers of the colon and rectum.

One more benefit to dairy products, in particular butter, may come from modifying how lactating cows are fed. An Iowa State University study published in the *Journal of Dairy Science*, June, 2007, found that butter composition and texture were improved by feeding cows additional lipids in the form of roasted soy

beans. Cows selected for producing higher unsaturated fat milk had a higher *health-promoting index* (HPI) than cows producing less unsaturated fat milk. The high HPI cows that were fed additional lipids in the form of 5 percent RSB (*roasted soybeans*) yielded more unsaturated butter with a higher HPI. Selecting cows with more health-promoting milk fatty acid composition along with feeding supplemental RSB produced softer butter at refrigeration temperature with higher HPI values. Thus, changing the milk fatty acid composition can improve the nutritional and physical properties of dairy products in favor of consumer appeal.

Enjoying dairy products has never been healthier. Including milk, butter, yogurt, and cheeses of low fat content in our diet helps address health concerns and adds to life's pleasures.

ILC Resources continues its commitment to supplying the dairy feeding industry with a consistent quality source of *calcium* in order for dairy products to remain an excellent source of healthy nutrition for improving our daily lives. ■

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Distillers' Grain *continued from page 1*

diets, we need to offset a potential imbalance of Ca:P ratios with additional fortification using CaCO₃. As nutritionists know, maintaining balance becomes more important as advances in feeding more DGs in diets are discovered.

This could be accomplished simply by feeding proper amounts of additional calcium from CaCO₃. While that's a simple, easily understood remedy, accomplishing this recommendation may not be simple. Obviously, ILC Resources stands well prepared to furnish the industry with a source of CaCO₃ in a variety of gradations to best suit varying feeding situations. How to best present additional CaCO₃ to each end-user species may necessitate new and creative thinking. The different species suggest a need for different solutions.

Cattle Feeding

Additional separation of feedlot/finishing conditions from cow-calf and/or stocker conditions is merited. Many feedlot/finishing operations currently incorporate commercial liquid supplementation into their feeding schemes, especially in the western feeding regions. Due to limitations on the dynamics of liquid suspension, additional calcium supplementation may be difficult to accomplish by increasing formulation concentrations. However, by increasing dietary consumption levels of suitably Ca-fortified supplements, adequate additional levels of Ca can be delivered. Even though feeding DGs may reduce additional supplemental dietary protein needs, diets will need fortifying with other nutrients to balance nutrition for optimal performance. Thus, nutrient profiles in supplements may change from traditional formulations, but

dietary supplementations will remain necessary. Added calcium will be one emerging need. If feeding DGs increases in stocker and cow-calf enterprises, a shift from historically higher P-fortified supplementation should be considered. At the same time, greater proportions of supplemental Ca will be called for. Changes in mineral formulations will be demanded along with other commercial supplementation—dry or liquid.

Dairy

An added element may exist with lactating dairy cows. Feeding distillers' grains (wet or dry) will furnish most additional protein supplementation necessary. Typically, feeding DGs substantially increases the intake of RUP (Rumen Undegradable Protein—or by-pass protein). This is good, but only to a point. Soluble protein is needed to adequately "feed" the bacterial populations in the rumen. Ingredient sources offering lower to medium protein levels and high in soluble protein are available. If fortified with other additives and ingredients (e.g. CaCO₃), this type of supplementation could furnish soluble protein to feed the rumen "bugs" and provide other needed nutrients for the cow. There may be ruminant considerations here which could equally apply to both beef and dairy.

Monogastrics

Monogastrics share some needs with ruminants, but also present other unique considerations. Bedrock to swine and poultry limitations is feeding only *distillers' dried grains* (e.g. DDG-S), not wet. Also, the typical high fiber content in DDG-S limits effective feeding levels. Feeding 15 percent or more DDG-S will drive up P concentrations; thus, added Ca supplementation may be required.

These are but a few conditions to ponder. Other scenarios may call for additional creative solutions. As the feeding of *distillers' grains* (dry or wet) changes the dynamics of feeding livestock, one fact is apparent: Dietary calcium levels need to be adjusted. This may force new methods of dietary delivery systems to be explored. Fundamentally, ILC Resources will continue to help the industry focus on the justifiable needs for feeding CaCO₃ while remaining dedicated to serving those needs. Necessary—not unnecessary—supplementation is what we promote. ■

SAFETY *continued from page 2*

cation lines readily exist with governmental authorities; e.g. law enforcement and FDA district offices.

ILC Resources has been committed to the livestock and poultry feeding industries and agriculture for over 80 years. All decisions and practices answer rigidly to maintaining that commitment. Success is measured by adherence to our core principles. As a company and as individuals who make up this company, we share in our nation's concern for the safety of our food supply. Continuing awareness and following good manufacturing practices and policies keep ILC in ALERT to provide safe feed ingredients. ■

