MIX 30

THE HIGH ENERGY LIQUID FEED.

Agridyne, LLC | PO BOX 7510 Springfield, Illinois 62791

800-575-7585 | WWW.MIX30.COM

What is MIX 30?

MIX 30 Liquid Feed is a “high energy” protein supplement created from a combination of corn and soy based co-products. This proprietary blend of ingredients results in a palatable, consistent, nutrient-rich product that supplies a judicious combination of both protein and energy for all ruminant diets.

Most liquid fermentation co-products are lacking nutritionally in one or more aspects. Agridyne combines these ingredients in a manner that overcomes these inadequacies, and in doing so takes full advantage of each ingredient’s positive nutritional attributes. In addition to their nutritional inadequacies, these liquid fermentation co-products are also very inconsistent. To overcome this problem, Agridyne employs large batch technology in its manufacturing process, effectively eliminating the variability inherent in each individual ingredient.

MIX 30 was developed as an alternative to the traditional molasses-urea liquid feed. MIX 30 has the versatility to be used in a wide variety of feeding situations. Agridyne’s goal in developing MIX 30 was to produce a quality product that was economical to use, palatable to the animal, nutritionally superior and more consistent than the individual ingredients that were available on the market.

Agridyne experimented and researched over 60 different combinations of the various ingredients that were on the market at the time. Eventually, the field was narrowed to two blends, and after extensive field trials. It was determined that blend #30 was the ideal ingredient combination, able to provide a wide range of benefits in all segments of the cattle industry. The product was then labeled “MIX 30 “and the rest is history.

MIX 30 NUTRIENT PROFILE

PROTEIN
Unlike other liquid feeds that utilize crude protein from either “all natural” sources or extremely high non-protein nitrogen sources (NPN). MIX 30 incorporates a judicious combination of both natural and NPN proteins from the individual ingredients. The result is a unique combination of protein from a variety of sources that is more practical and efficient than one single source.

CARBOHYDRATE
Because MIX 30 utilizes fermentation co-products from the production of starch from corn grain, it contains a very low level of starch. This low starch content makes it very desirable for use as a non-starch energy source in finishing rations, promoting lower ration starch levels, reducing the probability of rumen acidosis. The type of carbohydrates in MIX 30 are also ideal for ruminants on forage based rations, providing a carbohydrate energy source that is very compatible with rumen forage microbes.

FAT
Another key component to the MIX 30 blend is the addition of a unique vegetable fat. Because fat contains 2.25 times more energy than carbohydrates, it is an excellent source of energy. The 10% fat level in MIX 30 can meet the optimum dietary level for fat when used as a ration conditioner. Being that vegetable fat is a natural source this allows producers not to worry if MIX 30 will become rancid, as with other fat sources. The type of fat in MIX 30 has been shown to play an important role in reproduction and immune function.

MINERAL AND VITAMINS
MIX 30 is fortified with trace minerals and vitamins. The development of MIX 30 “broke the mold”, providing the feed industry with a high quality alternative to the traditional molasses-urea based liquid feed. With MIX 30, Agridyne has achieved its goal of supplying the feed industry with a versatile, economical, palatable, consistent and nutritionally sound product that can be used in a wide variety of feeding situations.

MIX 30
THE HIGH ENERGY LIQUID FEED.

MIX 30 PLUS

39473

A liquid feed supplement for all classes of beef, dairy, & sheep on pasture or complete mixed rations.

MIX 30 Liquid Feed

Fortified with Trace Minerals and Vitamins

Crude Protein, Min.	16.00 %
(This includes not more than 11% equivalent crude protein from non-protein nitrogen)	
Crude Fat, Min.	10.00 %
Crude Fiber, Max.	1.00 %
Acid Detergent Fiber, Max.	0.50 %
Calcium, Min.	0.05 %
Calcium, Max.	0.55 %
Phosphorus, Min.	0.35 %
Salt, Min.	2.50 %
Salt, Max.	3.50 %
Potassium, Min.	0.45 %
Copper, Min.	2 ppm
Copper, Max.	7 ppm
Selenium, min.	0.15 ppm
Zinc, Min.	30 ppm
Vitamin A, Min.	7000 IU/lb
Moisture, Max.	60.00 %

INGREDIENTS

Corn Condensed Distillers Solubles, Condensed Fermented Corn Extractives, Feed Grade Vegetable Oil, Condensed Extracted Glutamic Acid Fermentation Product, Urea, Sodium Chloride, Zinc Amino Acid Chelate, Manganese Amino Acid Chelate, Copper Amino Acid Chelate, Cobalt Sulfate, Selenium Selenite, EDDI, Potassium Sorbate, Vitamin A Supplement, Vitamin D3 Supplement, Vitamin E Supplement, Xanthan Gum

FEEDING DIRECTIONS

This product can be fed free-choice in lick tanks or open top containers, or added into a mixed ration. Feed up to 4 lbs of this product per head daily. Consumption should be monitored to obtain desired daily intake. Provide a source of clean, fresh water at all times. Care should be exercised with starved, stressed or debilitated animals when this product is provided free-choice.

"CAUTION: USE AS DIRECTED."

This product contains added copper. Avoid excessive consumption by sheep and goats. This product contains a source of non-protein nitrogen. Avoid excessive consumption. Manufacturer's feeding instructions should be followed. This product contains condensed extracted glutamic acid fermentation products not exceeding 30% of total formulation. Product contains ingredients that do not stay in suspension. This product must be agitated before being dispensed or fed. The viscosity of this product varies inversely with temperature.

Manufactured by
Agridyne, LLC
Springfield, IL 62791

Product weighs 9.15 lbs. per gallon (1.097 kg. per liter) at 20º C

3/15/2019

MIX 30

THE HIGH ENERGY LIQUID FEED.

Typical Analysis

MIX 30 PLUS

TYPICAL ANALYSIS

Standard Commodity Code: 20-859

		AS IS	100% DM
Moisture (H20)	%	56.900	
Dry Matter (Solids)	%	43.10	100.00
Crude Protein (CP)	%	16.53	38.35
Soluble Protein	%	14.05	32.60
Non Protein Nitrogen (NPN)*	%	8.18	18.98
Rumen Degraded Protein (RDP)	%	16.06	37.27
Acid Det. Indigest. Protein (ADIP)	%	0.14	0.318
Neutral Det. Indigest. Protein (NDIP)	%	0.31	0.710
Crude Fat (Fat by Acid Hydrolysis)	%	10.57	24.52
TDN for Ruminants	%	47.19	109.50
Metabolizable Energy (ME):	Mcal/lb	0.88	2.04
Net Energy Gain (NE_g):	Mcal/lb	0.45	1.05
Net Energy Maintenance (NE_m):	Mcal/lb	0.56	1.31
Net Energy Lactation (NE_l):	Mcal/lb	0.56	1.31
Neutral Deterent Fiber (NDF)	%	1.06	2.46
Acid Detergent Fiber (ADF)	%	0.59	1.36
Non Fiberous Carbohydrates (NFC)	%	10.00	23.20
Starch (ChoB1)	%	1.45	3.36
Sugar (ChoA2)	%	5.45	12.65
Soluble Fiber (ChoB2)	%	3.10	7.19
Ash	%	5.25	12.18
Calcium (Ca)	%	0.09	0.21
Phosphorus (P)	%	0.57	1.33
Magnesium (Mg)	%	0.96	2.23
Potassium (K)	%	0.77	1.79
Sulfur (S)	%	0.47	1.10
Sodium (Na)	%	1.19	2.77
Chloride (Cl)	%	4.68	10.86
Iron (Fe)	ppm	270.00	626.45
Zinc (Zn)	ppm	49.60	115.08
Copper (Cu)	ppm	3.34	7.75
Manganese (Mn)	ppm	12.76	29.60
Selenium (Se)	ppm	0.15	0.34
Cobalt (Co)	ppm	0.00	0.00
Iodine (I)	ppm	0.00	0.00
Vitamin A	IU/LB	7521.38	17451.00
Vitamin D	IU/LB	1661.07	3854.00
Vitamin E	IU/LB	43.53	101.00
Vitamin K	IU/LB	0.00	0.00
Vitamin B4	IU/LB	0.00	0.00
Niacin	IU/LB	0.00	0.00
Biotin	IU/LB	0.00	0.00
pH	SU	3.80	

Fatty Acid Profile - % of FAT

TFA - Total Fatty Acids	97.270
FFA - Free Fatty Acids	54.200
Glycerol	2.809
C12:0 Lauric	0.040
C14:0 Myristic	0.100
C15:0 Pentadecanoic	0.040
C16:0 Palmitic	17.700
C16:1 Palmitoleic	0.040
C18:0 Stearic	3.800
C18:1 Oleic	21.300
C18:2 Linoleic	51.900
C18:3 Linolenic	3.700
C20:0 Arachidic	0.100
C20:1 Eicosenoic	0.100
C20:2 Eicosodienoic	0.100
C22:0 Behenic	0.500
C22:1 Erucic	0.100
C24:0 Lignorceric	0.300
C24:1 Nervonic	0.040

Amino Acid Profile - % of RDP

Methionine	0.277
Lysine	0.901
Arginine	0.728
Threonine	0.728
Leucine	9.390
Isoleucine	0.728
Valine	1.075
Histidine	0.520
Phenylalanine	0.693
Tryptophan	0.173

DCAD INFORMATION

DCAD Value = -216.52 meq/100 grams (NRC, 2001)

GENERAL COMMENTS

Weight in Pounds per Cubic Foot:	67.5
Weight in Pounds per Gallon:	9.00
Weight in Pounds per Bushel:	N/A
Estimated # Tons per Truckload:	23
Estimated # Tons per Barge:	1400
Estimated # Tons per Rail Car:	92

Feeding Applications

MIX 30 is specifically designed as an alternative to the more common urea/molasses based liquid feeds. MIX 30's ingredients include corn and/or soy co-products as well as corn or soy fat. This unique combination of ingredients results in a palatable, consistent, nutrient-rich product that supplies a judicious combination of protein and energy. Because of it unique design, MIX 30 can be utilized in a wide variety of feeding situations and in the diet of all ruminants.

BEEF COWS

MIX 30 can be fed free-choice or mixed in a grain ration. The high energy of MIX 30 keeps cows in optimum condition and increases calf weight gain, especially as forage quality decreases. MIX 30 is low in starch and sugar making it an excellent addition to any forage-based diet. Unlike other liquid feeds that contain high levels of urea, MIX 30 is safe to feed in open top tubs or tanks without fear of digestive upset. In addition, the fat in MIX 30 provides a concentrated source of linoleic fatty acid, an important nutrient in beef cow nutrition. Producers feeding MIX 30 can expect intakes of 1 to 4 pounds/head/day depending on body condition and forage conditions.

GRASS CATTLE

Feed MIX 30 free-choice to calves that are grazing grass or legumes. MIX 30 can enhance the performance of cattle on both high and low quality forages. On poor quality forages, MIX 30 can supply additional forms of protein as well as additional energy to meet rumen fermentation requirements. MIX 30 can be beneficial on high quality forages as well. Most high quality forages contain excess protein in relation to the amount of energy they contain. MIX 30 can help correct the protein/energy imbalance by supplying the additional energy necessary for the utilization of the excess protein. This allows MIX 30 to help alleviate the bloat problems that are typically associated with grazing lush wheat pasture. Typical intakes of MIX 30 on grass cattle are from ½ to 3 pounds/head/day.

BACKGROUND CATTLE

Starting and growing cattle rations will benefit from the addition of MIX 30 at levels of up to 25%. Similar to the beef cow diet, MIX 30 provides an economical source of protein and energy for supplementing, starting and growing cattle on high forage diets. MIX 30 enhances ration palatability which contributes to higher feed intakes. Typical inclusion rates of MIX 30 are ½ to 4 pounds/head/day depending on the composition of the background ration.

FINISHING CATTLE

MIX 30 began in the feedlot and it provides a proven and economical means of supplementing protein and energy into the diet while simultaneously serving as a ration conditioner. In dry rations, MIX 30 helps to hold the ingredients together to prevent feed bunk separation. Furthermore, the 10% fat level in MIX 30 can meet the optimum dietary fat level when used in a high concentrate ration. MIX 30 also contains ammonium chloride which is often used in feedlot rations. MIX 30 is typically mixed into a ration at 1 to 3 pounds/head/day.

MIX 30

THE HIGH ENERGY LIQUID FEED.

(800) 575-7585

CALF CREEP
MIX 30 can be fed to calves as a creep feed to supplement the cow's milk when necessary. In many situations calves are fed MIX 30 before weaning and then after they are weaned. The calves become familiar with the taste while still on the cow and this then eliminates the lag period that typically occurs during this stressful time. Producers can expect intakes of 1/4 to 1/2 pounds/head/day in creep situations.

DAIRY CATTLE
Dairies can utilize MIX 30 in every phase of production.

BUCKET CALVES
MIX 30 can be used as an energy dense nutrient source for bucket calves. It is typically added directly into the milk or milk replacer at a rate of 5 to 10%.

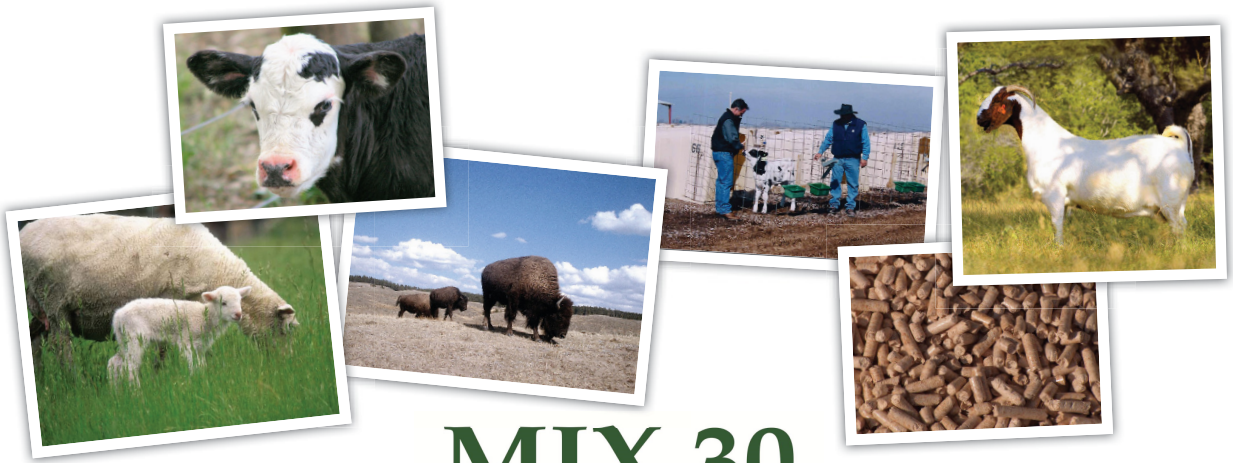
HEIFER AND BULL DEVELOPMENT
Similar to starting and growing rations, MIX 30 provides an economical source of protein and energy for developing dairy cattle. MIX 30 enhances ration palatability which contributes to higher intakes and few health problems.

LACTATING COWS
In the lactating cow ration, MIX 30 can be fed as a protein and carbohydrate source and simultaneously serve as a ration conditioner. MIX 30 also provides a concentrated source of linoleic fatty acid. MIX 30 should be included at 1 to 5 pounds/head/day.

CLOSE-UP RATION
MIX 30 provides a palatable source of ammonium chloride to the diet for a close-up cow ration. At the same time, MIX 30 will supply a concentrated source of energy to prepare the cow for freshening.

PELLETS AND CUBES
MIX 30 can be used in the pellet or cubing process at rates of 3% to 15% to improve nutrient content and enhance pellet and cube quality. In addition, the fat in MIX 30 helps reduce friction in the processing, which reduces the electrical power requirements as well as wear and tear on equipment.

SHEEP, GOATS, BISON AND DEER
MIX 30 is very versatile and can be fed free choice or mixed into rations of any ruminants. These other species benefit from the nutritional aspects of MIX 30, which is often lacking in their normal diets. Mix 30 also has ammonium chloride which is found in goat and sheep rations to help prevent urinary calculi.



MIX 30

THE HIGH ENERGY LIQUID FEED.

(800) 575-7585

Frequently Asked Questions

GENERAL INFORMATION

WHAT IS MIX 30?
MIX 30 is a blend of corn and soy co-products designed for feeding to ruminants in a variety of feeding situations.

WHAT IS THE GUARANTEED ANALYSIS OF MIX 30?
MIX 30 is guaranteed to contain 16% protein and 10% fat on an as-fed basis.

HOW IS MIX 30 DIFFERENT FROM OTHER LIQUID FEEDS?
Most liquid feeds contain very high levels of urea and molasses. Urea and molasses are extremely soluble and break down much too rapidly for ideal rumen utilization. MIX 30 contains a variety of nitrogen and energy sources designed to more closely match the fermentation capabilities of the rumen forage microbes. Most of the carbohydrates in MIX 30 are in a non-sugar, non-starch form, making MIX 30 very compatible with animals on forage based diets. Secondly, MIX 30 contains a high level of vegetable fat compared to other liquid feeds. This fat has numerous benefits that will be discussed later.

IS IT TRUE THAT FLIES DO NOT LIKE MIX 30?
Although the reasons are not clear, flies seem to have an aversion to MIX 30 and the animals consuming it.

NUTRITION

WHAT TYPE OF PROTEIN IS FOUND IN MIX 30?
MIX 30 supplies a unique combination of proteins from a variety of sources. These sources include natural proteins, soluble nitrogen and free amino acids and peptides.

WHAT TYPE OF CARBOHYDRATES DOES MIX 30 CONTAIN?
MIX 30 contains very low amounts of sugar and starch based carbohydrates. However, MIX 30 contains non-starch, non-sugar based carbohydrates that are “fiber microbe friendly”.

WHY IS THERE FAT IN MIX 30?
Fat is beneficial to ruminants for a number of reasons. Fat has 2.25 times more energy than carbohydrates, making it an excellent source of energy. In Mix 30 is a concentrated source of linoleic fatty acid supplied from the corn and soy based fat. Linoleic fatty acid is one of the essential fatty acids that has been shown to improve reproduction.

WHAT ARE THE ADVANTAGES OF THIS FAT OVER OTHER TYPES OF FAT?
The type of fat found in MIX 30 has several advantages. Colorado State University, under the direction of Dr. Don Johnson has proven be research the MIX 30 increases the fat levels in the blood. The blood fatty acid profile shows a large increase in C18:2 (linoleic acid), the predominant polyunsaturated fat present in MIX 30, proving that much of the fat in MIX 30 is bypassed on high concentrate rations. Research also shows that this fat does not inhibit fiber digestion and actually help digest the natural fat already present in the feedstuff of the total mixed ration.

MIX 30

THE HIGH ENERGY LIQUID FEED.

(800) 575-7585

FEEDING AND APPLICATIONS

HOW DO I FEED MIX 30?
MIX 30 can be safely fed in open top containers as well as traditional lick wheel feeders. Even though MIX 30 contains NPN (Non-protein nitrogen), the level found in MIX 30 is low enough to not be a problem.

HOW DOES MIX 30 WORK ON LOW QUALITY FORAGE?
Low quality forage diets commonly contain an insufficient amount of protein and energy to meet the nutritional requirements of the ruminant. On these types of diets, rate of passage is slow resulting in efficient microbial crude protein synthesis (more energy is necessary for microbial maintenance). MIX 30 can supply additional forms of protein as well as additional energy to help meet rumen fermentation needs. MIX 30 is also low in sugar and starch based carbohydrates. MIX 30 contains carbohydrates that are “fiber microbe friendly”.

IS MIX 30 NECESSARY ON HIGH QUALITY FORAGE?
MIX 30 can be beneficial on high quality forages as well. Most high quality forages contain excess soluble protein in relation to the amount of energy they contain. MIX 30 can supply the additional energy necessary for the utilization of the excess protein.

WHAT IS THE INTAKE OF MIX 30?
MIX 30 intake will vary depending on the quantity and quality of other feedstuffs available to the animal. The lower the quality and quanity of the forage, the higher the intake of MIX 30. Intakes generally range from .25 pounds on high quality forage up to 5 pounds on low quality forage. In situations, where cattle have low body condition scores and severely limited supplies of forage, higher intakes should be expected.

CAN I LIMIT FEED MIX 30?
Ruminants will not normally consume MIX 30 unless they are experiencing a nutritional deficiency. However, if animals are consuming more than you want, you can limit their intake in a variety of ways. You can adjust the location of the tub in relation to the water source and/or you can limit the amount that is available to them on a daily or weekly basis. Using lick wheel feeders will also limit the amount of MIX 30 consumed. Salt may also be used as a tool to control intake.

IS IT NECESSARY TO FEED A VITAMIN-MINERAL SUPPLEMENT ALONG WITH MIX 30?
Yes, it is recommended that a vitamin-mineral supplement designed to complement the particular forage the animals are consuming be made available, free choice. Since MIX 30 is a very nutrient dense, consumption of free choice mineral is typically reduced.

STORAGE AND HANDLING

WHAT KIND OF STORAGE TANK CAN I USE TO STORE MIX 30?
MIX 30 can be stored in a poly or steel tank.

DOES MIX 30 NEED TO BE CIRCULATED?
The fact is all liquid feeds separate over time, and MIX 30 is no exception. It is recommended that MIX 30 be circulated or agitated occasionally with a pump or with air. We suggest that MIX 30 be circulated for several minutes before pulling product from the tank. Mixing time should be increased as the interval between pull-outs lengthens.

WHAT TYPE OF PUMP DO I NEED TO HANDLE MIX 30?
Despite MIX 30’s high fat content, it generally flows well even in cold temperatures. In most situations a centrifugal pump is all that is necessary. In colder climates it is essential to use some type of positive displacement pump.

WHAT PRECAUTIONS DO I NEED TO TAKE FRO HANDLING MIX 30 DURING THE WINTER?
Since MIX 30 is slightly acidic it has a lower freezing point. At extremely cold temperatures it will thicken up and pump harder (temperatures below 10 degrees). To alleviate any problems, simply empty the pump and pipe lines out when not in use. The product in the tank will generally hold its heat and stay liquid. Another option is to place heat tape around the pump and pipe lines to keep the product warm.

Why you should feed MIX 30 all year

Those of you who raise cattle for a living know the importance of providing the proper supplementation to your cattle through the winter months. Proper nutrition is perhaps the most important aspect in livestock production. Indeed, all other aspects of livestock production from reproduction to growth to health are to a great extent dependent on the nutritional status of the animal. Supplying the correct nutrients into the diet permits the animal to perform to its maximum potential.

The unique formulation of MIX 30 gives it characteristics that make it an ideal feed for ruminants on forage based diets. On low quality forages MIX 30 can supply quality sources of protein and energy. As well, on high quality forages, MIX 30 has the ability to correct imbalances that commonly exist, especially protein-energy imbalances that are quite common in lush growing forage.

Perhaps MIX 30's most unique attribute is its ability to supply these high quality nutrients in the most economical means possible. MIX 30 is an investment, and no other feed has the potential of MIX 30 in providing a high rate of return in investment. Every dollar spent on MIX 30 creates the potential to return multiple dollars.

Best of all, when you feed MIX 30 you do not have to invest a large amount of money to realize these returns. Most other feeds require a large investment in equipment and labor. Many dry feeds have high intake levels, requiring a very large cash flow with no assurance of an adequate return on those dollars.

MIX 30 creates this potential for a high return on investment using a very simple principal. Combine your cheapest feed source, grass, with the most effective converter of grass, the ruminant and maximizes their potential output and efficiency by providing the ruminant with the proper combination of supplemental nutrients in the most economical fashion possible. By utilizing MIX 30 to accomplish what no other feed can a high rate of return on a low dollar investment. Most feeds fail to provide the necessary combination of nutrients, or they fail to provide them in an economical package.

This brings us to the issue of year-round feeding. Grass, as a stand alone feed, can only meet the necessary nutritional requirements of the ruminant for a limited time throughout the year. This is due to grass's seasonality and how it is affected by varying conditions, especially weather. If grass is the only feed available, it stands to reason that the ruminant is not receiving the nutrients necessary for optimum efficiency during a large part of the year.

If nutrient requirements are not being met, performance and production suffer. One cannot stress enough the financial consequences of improper nutrition, especially as it pertains to reproduction. At today's prices everyday a cow remains open, it is estimated to cost a minimum of $2/hd/day or $42 per head/heat cycle!

The nutrients in MIX 30 are a proven means of bringing breeding programs back on schedule in even the worst conditions. Likewise, the nutrients supplied in MIX 30 promote better utilization of forage by the ruminant. Better forage utilization means increase milk production which translates into heavier weaning weights. With calf prices at $1 or more per pound and the potential of 30-50 additional pounds per calf, it is easy to see why MIX 30 is an excellent investment and ideal tool for supplying the proper nutrients to the ruminant.

MIX 30, due to its unique nutrient profile has the ability to serve as a year-round feed for supplementing ruminants on grass. MIX 30 can do it better and more economically than any other feed. It's formulated to be self-limiting with animal intake designed to vary according to the quality of the forage, condition of the animal and environment. This allows for the consumption to fluctuate with the animals nutrient needs. As conditions improve, MIX 30 consumption decreases. As conditions deteriorate, MIX 30 consumption increases. At all times the necessary nutrients are available for providing optimum ruminant efficiency and production.

MIX 30

THE HIGH ENERGY LIQUID FEED.

(800) 575-7585

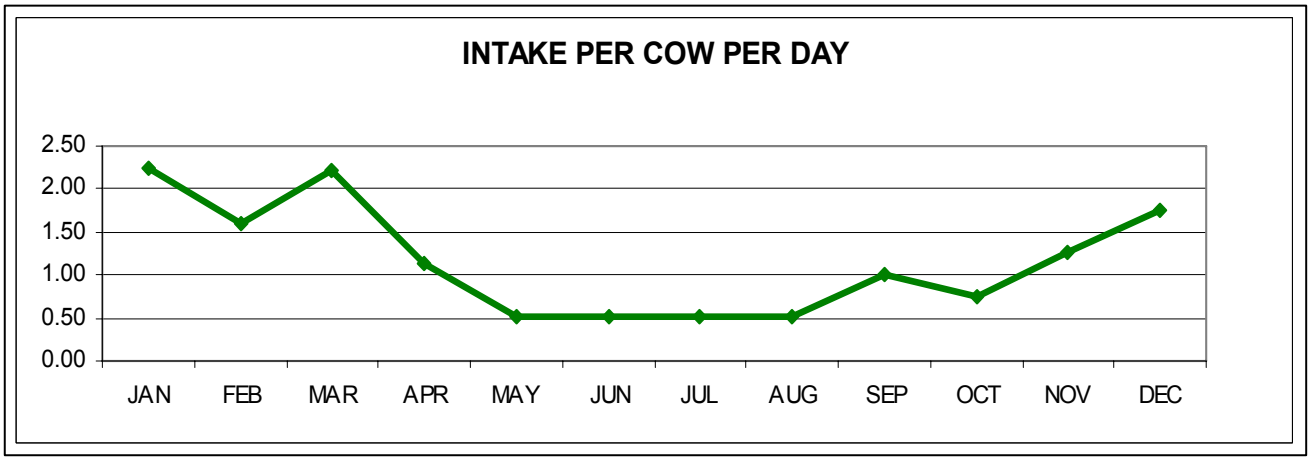
This is in direct contrast to most other supplemental feed systems. Most other liquid feeds lack sufficient energy and utilize strong acids to limit intake. Limiting intake when forages are of low quality only prevents the ruminant from getting the necessary nutrients when it requires them the most. Most dry feeds require intensive labor due to the fact they must be fed every day in order to limit intake.

Those who feed MIX 30 on a year-round basis report narrower intake fluctuations and the elimination of "slug" eating. Annual feed supplementation is actually reduced and animal condition and performance is optimized.

This spring, when the grass starts to turn green, remember, it won't be long before it will become lacking in essential nutrients. It is imperative that deficiencies and imbalances be corrected in order to avoid potential problems and to maximize ruminant efficiency and production. No other feed can complete this task as efficiently and as economically as MIX 30. Try MIX 30 year-round and realize for yourself the high rate of return that MIX 30 offers.

2003 ANNUAL CONSUMPTION OF MIX 30 AT PAUL BAKER FARM - CRESTON, IA - PH: (641) 344-3927

NUMBER OF COWS	STARTING DATE	ENDING DATE	COST PER TON	INTAKE PER HD PER	PER COW PER DAY ($)	INTAKE PER COW (LBS)	COST PER COW ($)
150	1/1/03	12/31/03	$160.00	1.19	$0.095	432.93	$34.63
MONTH	**TOTAL INTAKE PER MONTH**	**INTAKE PER COW PER MONTH**	**INTAKE PER COW PER DAY**	**TOTAL COST PER MONTH**	**COST PER COW PER MONTH**	**COST PER COW PER DAY**	**MONTH**
JAN	10380	69.20	2.23	$984.95	$6.57	$0.21	JAN
FEB	7400	49.33	1.59	$702.18	$4.68	$0.17	FEB
MAR	10260	68.40	2.21	$973.57	$6.49	$0.21	MAR
APR	5240	34.93	1.13	$497.22	$3.31	$0.11	APR
MAY	2360	15.73	0.51	$223.94	$1.49	$0.05	MAY
JUN	2360	15.73	0.51	$223.94	$1.49	$0.05	JUN
JUL	2360	15.73	0.51	$223.94	$1.49	$0.05	JUL
AUG	2360	15.73	0.51	$223.94	$1.49	$0.05	AUG
SEP	4720	31.47	1.02	$447.88	$2.99	$0.10	SEP
OCT	3420	22.80	0.74	$324.52	$2.16	$0.07	OCT
NOV	5900	39.33	1.27	$559.85	$3.73	$0.12	NOV
DEC	8180	54.53	1.76	$776.20	$5.17	$0.17	DEC



THE ABOVE NUMBERS ARE VERY INDICATIVE OF WHAT OTHER PRODUCERS FEEDING MIX 30 YEAR AROUND ARE REPORTING. 2003 WAS A "TYPICAL" YEAR AS FAR AS WEATHER CONDITIONS WERE CONCERNED. ACTUAL INTAKES WILL VARY FROM PRODUCER TO PRODUCER DUE TO THE MANY VARIABLES INVOLVED. FORAGE QUALITY, FORAGE QUANTITY, COW CONDITION AND WEATHER CONDITIONS ARE ALL FACTORS THAT AFFECT INTAKE.

The Company

Agridyne, manufacturer of MIX 30, has its main offices locate in central illinois, the heart of corn processing country. For over 40 years, its owners and employees have been actively merchandising feed ingredients and products.

SERVICE
Agridyne strives to provide product to its customers in the most economical way possible. Agridyne is large enough to handle the large quantities necessary to obtain discounted ingredient pricing, yet small enough to keep overhead and non-ingredient expenses to a minimum.

DISTRIBUTION
Agridyne's transportation distribution system employees 17+ trucking firms and a rail tanker fleet of over 100 rail tankers. This allows Agridyne to maintain a large network of storage and distribution facilities throughout the country. As Agridyne grows, extra rail tankers and trucks are added along with additional storage and distribution facilities.

ECONOMICS
Agridyne's large storage capacity and efficient transportation infrastructure enables Agridyne to accommodate the needs of supplier's when they need to move large volumes of product, quickly. As a result, Agridyne is able to purchase product at below market pricing. This approach, along with deferred contracting enables our customers to also lock in lower than market prices.

QUALITY ASSURANCE
Co-products are inherently variable in terms of nutrition. In addition, the supply of co-products can vary radically throughout the year. Agridyne utilizes a system that eliminates both of these variables, creating a consistent, high quality, finished product.

FACILITY LOCATIONS

MANUFACTURING FACILITIES

Pekin, IL
Nebraska City, NE
Pickens, MS
Berks, NE
Hereford, TX
Fort Worth, TX
Cheyenne, WY
Holcomb, KS

RAIL DISTRIBUTION FACILITIES

Sidney, MT
Campbellton, FL
Horse Cave, KY
Turlock, CA
Elgin, TX
Lancaster, SC
Kimberly, ID
Miles City, MT
New Rockford, ND

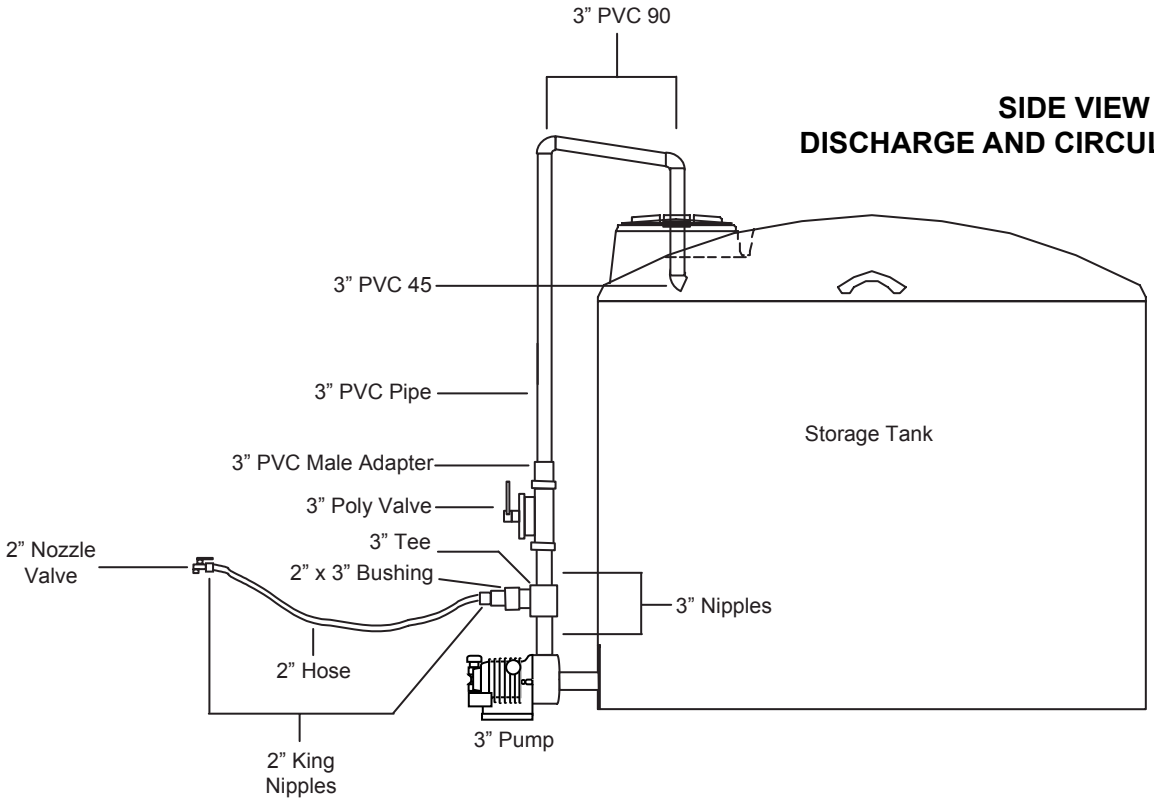
MIX 30 is available by barge, rail or truck out of these locations. The total storage capacity is approximately 100,000 tons. Due to our large storage capacity, we can guarantee a consistent, readily available supply and offer a volume commitment for up to 12 months. In addition, Agridyne maintains a nationwide network of dealers that handle the sale of MIX 30 to customers that cannot handle full truckload quantities of MIX 30.

MIX 30
THE HIGH ENERGY LIQUID FEED.

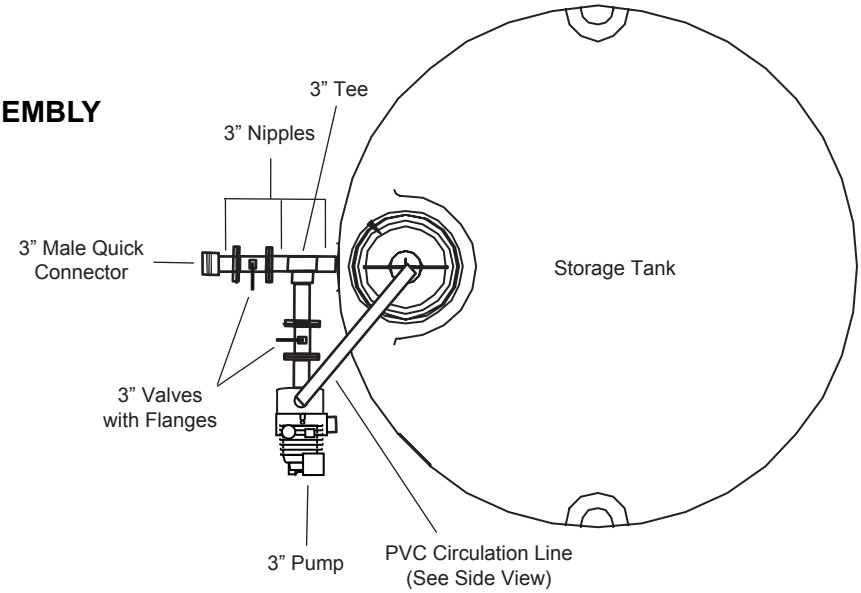
(800) 575-7585

Suggested Tank Set-Up

SIDE VIEW
DISCHARGE AND CIRCULATION LINES



TOP VIEW
INTAKE VALVE ASSEMBLY



(800) 575-7585

Storage & Feeding Equipment

Agridyne does not typically buy and sell storage and feeding equipment. However, we do maintain a few storage tanks at some locations. In addition, we keep working relationships with several suppliers throughout the country. Please contact Agridyne for a supplier near you or to check on equipment availability.

Open Top Containers

- Agridyne recommends the use of open top containers for feeding MIX 30.
- These containers can be purchased at any farm store or from national suppliers.
- These containers come in many capacities to best fit your needs.

Lick Wheel Feeders

- These feeders come in two (2) and four (4) wheel models.
- They are typically built of heavy duty polyethylene.
- Lick wheel feeders are available nationwide from a number of suppliers or can be purchased locally.

Intermediate Bulk Containers - "Totes"

- These are excellent containers for handling small quantities of MIX 30.
- Totes can be used for storage and/or delivering MIX 30 to your feeders.
- Totes typically come in 275 gallon capacity (40" W x 48" D x 46"H) and have a 2" discharge valve at the base with a 6" fill hole on top.
- They are forklift compatable and come with either a wooden or steel pallet.

MIX 30

THE HIGH ENERGY LIQUID FEED.

(800) 575-7585

LINOLEIC ACID AND INCREASED CALF SURVIVABILITY

Joint Cattle Research Project
By Lois Kerr

Ft. Keogh Livestock and Range Research Laboratory, and ARS facility in Miles City, has done a tremendous amount of research to develop economical and environmental feasibility for range livestock production systems. Research there revolves around rangeland management and ecology, beef cattle genetics, range animal nutrition, and beef cattle reproduction.

One particular program, run by scientist Bob Bellows at the Ft. Keogh facility, in cooperation with the Eastern Ag Research Center at Sidney with Jerry Bergman, concerns the use of safflower seed as a food supplement for heifers.

Bellows explains, "We wanted to know if supplemental fat in diets of animals would have an effect on reproduction and on birth weight in the calves." Researchers also wanted to know if the added fat on calves would help in generating body heat in newborns, thereby lessening stress-related problems.
"Jerry Bergman is one of the premier safflower breeders in the world, so we went to him for help with the particular kind of safflower that we needed," states Bellows. The Sidney center does the fatty acid work and supplies the proper safflower seed for the Ft. Koegh scientists. The Ft. Keogh center mixes the ration and conducts the field research.

The project calls for heifers to begin receiving safflower seed in their daily rations 55 days before calving. The ration, using polyunsaturated seed, increases fat content from 2.2% to 5.1%. Polyunsaturated linoleic oil is oil that is found in body fat, which helps regulate body temperature. Body fat containing more linoleic oil reduces stress because of better body warming and makes for healthier calves.

Linoleic acid is a major fuel in cells for heat production. It is stored in the brown adipose tissue. Safflower is rich in linoleic oil. By receiving supplements of this oil, herd health is increased. Bellows states that newborn calves whose mothers received linoleic oil supplements prior to calving produced much more body heat when exposed to a cold room environment that did those calves whose mothers did not receive the supplement. Survival of calves increases dramatically if they can produce more body heat at birth.

Bellows says the calves whose mothers received the supplement had slightly higher birth weights, but not enough to cause calving problems.

Researchers also found that heifers receiving a safflower supplement prior to breeding time had higher fertility rates and rebred faster than did those heifers not on the safflower supplements. This safflower supplement research has so far shown positive results on calf cold tolerance and on cow reproduction.

The study is in its third year. Nearly 350 head of cattle have been used for this research.

"There is a lot of excitement over this research, but we are still in the experimental stages," cautions Bellows. "We need another year yet of consistent results before we can draw definite conclusions." He adds, "The joint cooperation with the Sidney center has been very positive."

Jerry Bergman from the Sidney center would like to see further studies done with safflower in livestock rations. "I would like to see studies done on the use of supplementary fat to improve meat quality, to make a value added product for the specialty health niche market, " he says. Bergman believes that increasing monounsaturated dietary fat supplements for butcher cattle would improve the meat fatty acid profile from saturated fat to less saturated fat. This would also tenderize the meat.

Could you feed lean beef cattle a dietary fat supplement to improve meat quality and tenderness for a special niche market? "I believe we can," says Bergman.

ALKALINE BLOAT (WHEAT PASTURE BLOAT)

The most common ailment that occurs in cattle feeding is bloat. Bloat accounts for 40.50% of all nutritional diseases and ailments. Of the death losses due to nutritional deficiency diseases and ailments, 36% were attributed to bloat.

There are basically two forms of bloat, each associated with a particular feeding regime. Acid bloat or acidosis results from the formation of excess methane gas due to the production of excess lactic acid from rations high in starch-based carbohydrates. Acidosis most commonly occurs in high concentrate/low roughage feedlot diets. Alkaline bloat or alkalosis is most common on lush, green, immaturely harvested or grazed forages such as wheat pasture, and is caused by the interaction of several factors. Alkalosis is the most complicated and difficult to treat, and as acidosis can be treated with some of the same methods as alkalosis, the following discussion will focus on alkalosis.

Alkaline bloat or alkalosis can be a major problem when grazing wheat or legumes. Fast growing grasses and legumes produce a substance called saponins that are characterized by properties that form colloidal solutions and produce soapy lathers, especially when mixed with water (thus, the problem is exacerbated by early morning dews or light rain). High surface tension of these saponins causes the entrapment of ammonia gas produced from the breakdown of excess protein by rumen microorganisms (immature forages have a comparatively high protein content compared to mature forages). As surface tension continues to increase, rumen fluid foams, forming strong walled bubbles. This prohibits the animal from belching and the gas continues to build until the animal cannot breath and it dies of suffocation or anoxia. High levels of NPN or nitrates can intensify the effect.

There are basically three treatment solutions to the problem of alkaline bloat. One is to reduce the surface tension caused by the saponins. Fat acts to chemically dissolve the saponin layer, acting as a surfactant, reducing the surface tension of the rumen fluid.

The second treatment solution is the elimination of the ammonia gas. The most effective method of decreasing the accumulation of ammonia gas is the addition of an acid to combine with the ammonia, thus effectively neutralizing the pH of the rumen. Neutralizing the ammonia gas in the rumen and dissolves the saponin layer, decreasing the incidence and severity of bloat.

The final step is to address the undesirable effects of excess protein that is the source of the ammonia gas. This excess protein can be addressed by simply raising the energy level of the ration, reducing the de-aminazation of the protein by rumen microorganisms and decreasing the production of ammonia gas. The net effect is increased production and improved animal health.

STARTING & BACKGROUNDING RATIONS

Perhaps the most difficult and challenging phase of cattle production is the initial period immediately following weaning, commonly referred to as the starting or backgrounding phase. Entering this period calves are under stress for a variety of reasons. Having been abruptly separated from their mother, they are introduced to a diet drastically different to what they are accustomed. They may also have been hauled many miles, vaccinated, castrated, dehorned, dewormed, implanted, and mixed with other cattle. It is a major challenge just to keep them alive, let alone get them to gain.

Despite these obstacles it is possible with good management and proper nutrition to keep calves alive and get decent gains out of them during this initial phase. Some producers have even succeeded in getting calves to perform over and above what is typically expected during this time period. With few exceptions most of these producers have scrapped their traditional feeding systems and instead adapted a system that takes advantage of nontraditional feeds.

The theory behind this system is quite simple. Traditionally, in an attempt to get appreciable quantities of energy into the calf, most rations have typically relied on starch-based products for this energy source. But cattle are designed by nature to handle fiber-based ingredients. Adding starch creates an antagonist environment in the rumen of the animal, resulting in reduced intake, reduced forage digestibility, and poor feed efficiency. If high starch ingredients are minimized and substituted with nontraditional high fiber/highly digestible ingredients, the depression of forage digestibility that often accompanies high starch rations can be eliminated. In addition, enhancing the diet's palatability by using a ration conditioner effectively stimulates the appetite, increases intake, and improves feed efficiency.

Numerous trials and studies have been done to determine the comparative effectiveness of these nontraditional feeds vs. more traditional feed sources. The University of Kentucky has done considerable research in this area. Their studies have consistently demonstrated that nontraditional feed sources provide superior performance and cheaper gains than traditional sources.

One of the most telling examples is a trial that compared soyhulls to corn with the following conclusion:

1) Soyhulls are an excellent choice to supplement high forage diets.

2) can replace corn on a pound for pound basis with slightly better results.1

Because the amount of time that calves are backgrounded can be relatively short it is imperative to get intakes as high as possible early in the feeding period and that gains be rapid and efficient. Increasing the dry matter intake (DMI) of an animal is the most economical way to boost its energy intake. The more dry matter it consumes in relation to its maintenance requirement the more efficient it becomes. As rate of passage increases the amount of microbial protein in the rumen increases. This requires fiber/feed sources that are highly digestible and palatable. Perhaps the biggest drawback to using nontraditional feeds is that they can be inherently dry and therefore unpalatable. This problem can be overcome by the inclusion of a ration conditioner that supplies energy and protein without upsetting rumen function.

THERMOGENESIS 201 — NOTHING BEATS A LITTLE HEAT
By Clint Peck

Last winter in our first lesson on the subject of thermogenesis we learned that just about anywhere you raise cows and calves there will be times when nothing beats a little heat. And while sunshine, heat lamps and hot boxes can help warm calves from the outside, it's the heat produced inside the calf that can be critical to its survival and future performance. Diet energy is necessary for heat production and beef producers who feed adequate energy can improve the cow's ability to product heat. In turn, this increased "thermogenesis" — or heat production capability — carries over to her newborn calf.

This year in Thermogenesis 201 we will further explore the complex relationships between a cow's diet and the thermal physiology of both the cow and calf. These relationships are being examined by Bob Bellows, reproductive physiologist, USDA-ARS Livestock and Range Research Center, Miles City, Mont.

Bellow's research shows that cows fed high fat diets produced calves with higher body temperature, when challenged with a constant cold exposure, than cows fed low fat diets. "We believe this could have an effect on calf survival," explained Bellows. He emphasized he doesn't have any data on this thermogenic effect on calf survival, but hypothesizes that calves born with the ability to maintain a higher core temperature are better able to withstand the rigors of birth.

Bellows cites experiments with beef cattle in Wyoming where pregnant cows were fed 50 to 65 % of recommended levels of energy. Only 90% of the calves survived from these "low-energy" dams, while 100% of calves were alive from cows fed adequate levels of energy. The data gets even more interesting when we look at calf survival after birth. At weaning only 71% of the calves survived from the low-energy dams. This is compared to a 100% live-calf rate from the cows fed adequate energy.

The majority of this death loss was due to scours, which indicates that the immune system is effected by low-energy intake, according to Bellow. The relationship between energy and protein in the diet of a pregnant cow cannot be overlooked. In research on weak-calf syndrome, the incidence of weak and dead calves increased as crude protein in the diets decreased.

"There is no question inadequate protein intake during gestation can potentially result in calves which are more susceptible to cold stress", says Bellows. "Cold stress and low crude protein diets can interact to markedly increase the incidence of weak calves." To maintain normal body temperature, the newborn calf must product enough heat to balance evaporative and non-evaporative heat losses. "The transition from the warm uterine environment to the often-times hostile external
environment brings about many physiological changes necessary to maintain normal body temperature," explains
Bellows.

Heat production is dependent about 50% on shivering thermogenesis in muscle tissue, and 50% on non-shivering thermogenesis in the brown adipose tissue – a specialized organ located principally around the kidneys in newborn calves. Whenever feed is digested and metabolized, heat is produced as a by-product. The fuels for heat production, or thermogenesis, are carbohydrates, glucose, fats, lipids and fatty acids. "Brown fat" is specifically used to produce heat in the body. Bellows would like to further explore the relationship between brown fat deposition, its metabolism and the type of fat in the diet — and whether this is something related specifically to energy metabolism through glucose. By including supplemental safflower-based fat in cow rations during the last 53 days of gestation, the Fort Keogh researchers were able to improve the cold tolerance and
increase plasma glucose concentrations in newborn calves.

And while Bellows still has not pinpointed whether linoleic acid is the key fat in the thermogenic effect, it appears there is a boost in reproduction with the addition of fat to the diet. Bellows has seen higher pregnant rates from cows fed both the high oleic and linoleic safflower. "Pregnancy rates were greater in the dams that received fat supplementation during gestation," says Bellows. "Its important to note that even rations which might otherwise be
considered "Good" diets for gestation cows appears to be low in fat."

Positive response to fat supplementation may be dependent on the lipid involved. This factor and possibly the specific fatty acids composition of the cow's diet may be important for both the cow and the calf. "If you look only at the energy and protein content of the diet, you may be overlooking an important component of the diet that can potentially affect the cold tolerance of the newborn calf and subsequent reproduction of the dam." Says Bellows. "When rations are formulated we need to be concerned about dietary fat in addition to the other nutrients such as protein, energy, vitamins and minerals."

What's encouraging about the research into the use of fat supplements used to boost the thermogenic effect in calves is the carry-over effect on reproduction in the cow, adds Bellows. "We apparently have something you can feed during gestation that builds up a reserve that can show up in positive reproductive efficiency.

This article appeared in the February 1999 Colorado Rancher and Farmer.

THE ROLE OF DIETARY FAT IN ENHANCING REPRODUCTIVE PERFORMANCE

In the areas of both beef and dairy research extensive literature has been published on the utilization of supplemental fat in the diet. The majority of this research has concentrated on the role of fat in increasing the energy density of the diet. In the last ten to fifteen years several institutions have focused attention on the role of dietary fat in enhancing reproductive performance.

Numerous studies indicate that the consumption of fat by cattle, particularly polyunsaturated plant oils, can positively influence reproductive performance. The most recent research has keyed on the influence fat has on certain specific metabolic pathways, and ultimately, hormones that directly modulate ovarian cellular processes. Dr. Gary L. Williams from the Animal Production Laboratory at Texas A&M University Agricultural Research Station, Beeville, Texas has done considerable research in this area. He has spearheaded and participated in many recent studies in this area as well as reviewed the latest evidence on this subject. (Talavera et al., 1985; Williams, 1989; Wehrman et al., 1991; Ryan et al., 1992; Ryan et al., 1994; Ryan et al., 1995; Bao et al., 1995; Thomas and Williams, 1996; Thomas et al., 1997; Bao et al., 1997)

One study entitled "Dietary Fats Varying in Their Fatty Acid Composition Differentially Influence Follicular Growth in Cows Fed Isoenergetic Diets", and conducted by M. Thomas, B. Bao, and G. Williams at the Animal Reproduction Laboratory, Texas A&M University Agricultural Research Station, Beeville, TX compared different types of fat with the hypothesis that each would influence ovarian follicular growth differently due to differences in the fatty acid composition of each fat. The study concluded, "consumption of polyunsaturated fatty acids (soybean oil) stimulates a greater rate of ovarian follicular growth in cattle compared to the control (no fat), animal tallow (saturated fat), and highly polyunsaturated fatty acids (fish oil)." "Beef cows fed supplement dietary fats exhibit remarkable changes in several metabolic and reproductive characteristics, including increased follicular growth and shortened anovulatory intervals post-partum. Dietary polyunsaturated fat seems to enhance follicular growth more than either saturated or highly polyunsaturated fat. Practical feeding schemes using fat to enhance reproductive performance in cattle may benefit when polyunsaturated plant oils are chosen instead of saturated or highly polyunsaturated fats".

In a review, yet to be published, entitled "Dietary Fats as Reproductive Nutraceuticals in Cattle" done by G. Williams and R. Stanko at Texas A&M University Agricultural Research Station in Beeville, TX, they indicated that enhanced reproductive performance from polyunsaturated plant oils is believed to be due primarily to the high amount of linoleic acid (C18:2) contained in these plant-derived oils.

As noted previously fat has been used mainly to increase the energy density of the diet. In the review just mentioned Dr. Williams labeled fat a "nutraceutical" due to the fact that it has physiological effects outside of its generally-accepted role as a concentrated form of energy, this being its ability to enhance reproductive performance independent of its energy contribution to the animal.

The fact that polyunsaturated fat can enhance reproductive performance independent of its role as an energy source was demonstrated in a study by D. Ryan, R. Spoon, M Griffith, and G. Williams conducted at the Animal Reproduction Laboratory, Texas A&M University Agricultural Research Station, Beeville, TX. They fed a high fat diet to groups of cows with differing body condition scores (BCS), but restricted energy intake so that BCS and body weight remained the same within each group throughout the feeding period. The study elicited similar enhanced reproductive responses in groups of cows with a BCS range of 4-8 (on a scale on 1-10), confirming the belief that fat is indeed "nutraceutical" and is capable of enhancing reproductive performance independent of its energy contribution.

MIX 30

THE HIGH ENERGY LIQUID FEED.

Agridyne, LLC
PO Box 7510
Springfield, IL 62791
Phone (800) 575-7585 | Fax (217) 787-4303

NEW ACCOUNT INFORMATION

ACCOUNT NAME & ADDRESS

ACCOUNT NAME _____

BILLING ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE _____ CELL _____

FAX _____

EMAIL ADDRESS _____

PRINCIPAL LINE OF BUSINESS _____

NUMBER OF YEARS IN BUSINESS _____

WHO TO CONTACT ON PAYMENTS _____

SHIP TO (IF DIFFERENT)

NAME _____

ADDRESS _____

CITY _____

STATE _____ ZIP _____

PHONE _____

FAX _____

NUMBER OF COWS _____

NUMBER OF CALVES _____

NUMBER OF STOCKERS _____

ORGANIZATION OF NEW ACCOUNT *(Place checkmark on appropriate designation and complete)*

_____ CORPORATION OWNER/PRESIDENT _____

_____ PARTNERSHIP PARTNER NAMES _____

_____ SOLE PROPRIETOR EMPLOYED BY _____

SPOUSE'S NAME _____

BANK REFERENCES

	BANK NAME	ACCOUNT #	ACCOUNT TYPE	PHONE	CONTACT
1.					
2.					

TRADE REFERENCES

	COMPANY NAME	ADDRESS	PHONE	CONTACT
1.				
2.				
3.				
4.				

STORAGE TANK INFORMATION

TANK DIMENSION - DIAMETER _____ HEIGHT _____ GALLON CAPACITY _____

STYLE/SIZE OF VALVE FOR TRUCKLOAD HOOKUP (ex. 3" Male quick coupler) _____

AGITATION METHOD *PUMP* or *AIR* PUMP TYPE (ex. 2" electrical - centrifugal) _____

ARE TANKS EASILY ACCESSED BY SEMI TANKERS? _____ IS ROAD ALL WEATHER? _____

ROAD WEIGHT LIMIT? _____

COMMENTS _____

_____

DIRECTIONS TO TANK _____

_____

_____

_____

DELIVERY WINDOW *24 HOURS* *DAYTIME* *MORNING ONLY* *AFTERNOON ONLY* *OTHER* _____

TRADE TERMS

1. Each load of MIX 30 is traded under a written contract (governed by National Feed & Grain Association rules) and each contract must be signed and returned.
2. 3 days minimum notice is required on orders to ensure timely delivery.
3. Payment terms are net cash receipt of invoice (due upon receipt) -no exceptions.
4. Accounts overdue will become prepay or refused shipment.
5. Prices are subject to change without notice unless under contract.
6. All "less than truckload deliveries" will be charged the full load freight rate unless otherwise specified.
7. Unless otherwise agreed upon in writing, if no one is present at time of delivery, buyer authorizes delivery.

I/We certify that all information has been supplied accurately and voluntarily and authorize the Seller to investigate my/our credit history, including bureau reports and financial responsibility. I/We authorize our banks to release information regarding our checking, savings and loan accounts. I/We also authorize the Seller to release information about our credit and payment history. I/We agree to make payments promptly in accordance with the above terms and further agree to pay attorney fees and all other costs which may be incurred if our account becomes in default.

Should credit availability be granted by Seller, all decisions with respect to the extension or continuation shall be at the sole discretion of the Seller. Seller may terminate any credit availability within its sole discretion.

All amounts due Seller are payable in accordance with the payment terms granted by Seller's credit department from which the goods and services are delivered. If any amount due Seller is not paid in accordance with such payment terms, a delinquency charge shall be added to the sum due, which charge shall equal the amount obtained by multiplying the delinquent balance by the lesser of (a) one and one-half percent (1½ %) per month or (b) the maximum lawful rate permitted to be charged under the applicable state's law.

PAYMENT TERMS ARE NET CASH RECEIPT OF INVOICE (DUE UPON RECEIPT) - NO EXCEPTIONS.

APPLICANT'S SIGNATURE _____ TITLE _____ DATE _____

PRINT NAME OF ABOVE SIGNATURE _____

CO-APPLICANT'S SIGNATURE _____ TITLE _____ DATE _____

PRINT NAME OF ABOVE SIGNATURE _____