

What's New for 2022

AGRI-PLASTICS
The Calf Housing Specialist®

DUAL XL™ HUTCH

For paired calves up to 8 weeks old

The "NEW" Dual XL™ boasts a larger inside growing area to allow calves to commingle at a young age. Buddying two calves in one hutch promotes companionship and competitiveness, which research has proven to help achieve optimal growth. Efficient growth = positive return-on-investment. Couple these benefits with one of the best warranties in the industry and get a winning combination with the Dual XL™ Hutch.

Crystal Creek® is proud to be an Agri-Plastics dealer. Let us help you with your calf housing design questions and penning needs. Made using only the highest quality resins, these housing systems will last for years. Designed by farmers, for farmers, all Agri-Plastics systems have practical design features that make setup and cleaning a breeze.



Dual XL™ Hutch Deluxe



Dual XL™ Hutch Rancher System



©All photos courtesy Agri-Plastics

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Creating Consistency in Mixing and Feeding Milk Replacer



By Ryan Leiterman, D.V.M.
Director of Technical Services

easy, mixing milk replacer correctly and consistently for every single feeding is a much more difficult task.

Mixing milk replacer to feed pre-weaned calves is a daily task on many farms. And it's a simple task, right? All it takes is adding the correct amount of powdered milk replacer to the correct amount of water, how hard can that be? While mixing milk replacer may seem

Most milk replacer tags give instructions for an 11.6% total solids mixture. If you mix 8 ounces of powder into 1.8 quarts of water to make 2 quarts of milk replacer solution, that is an 11.6% solids solution. We know that finished milk replacer solution weighs roughly 8.6 pounds per gallon. The formula to calculate percent total solids for a milk replacer solution is:

$$\frac{\text{Pounds of Milk Replacer Powder}}{\text{Pounds of Milk Replacer Solution}} = \text{Total Solids \%}$$

EXAMPLE:

$$\frac{0.5 \text{ Pounds (8 ounces)} \\ \text{of Milk Replacer Powder}}{4.3 \text{ Pounds (2 quarts)} \\ \text{of Milk Replacer Solution}} = \frac{}{} \text{11.6\%} \\ \text{Total Solids}$$





Calves have a narrow window of total solids concentration that they can tolerate. A total solids concentration that is too high, or too low, can lead to diseases like diarrhea and clostridial bloat. Most milk replacer manufacturers recommend that calves be fed a milk replacer solution mixture between 11.5%-13.0% total solids.

How is Accurate Mixing Defined?

An accurately mixed milk replacer solution will have a 0.5% plus or minus deviation from the exact target solution concentration. For example, if you are targeting a 12.5% total solids concentration then samples ranging from 12.0%-13.0% total solids are considered accurately mixed.

How Can You Monitor Total Solids Concentrations in Mixed Milk Replacer?

Many farms use a brix refractometer for colostrum management. This same refractometer can be used to monitor milk replacer total solids concentrations. Each milk replacer is different, and every company should have a unique formula to convert a % Brix reading into a percentage of total solids. For the Crystal Creek® Swift Start® calf milk replacer, the total solids percentage of the milk replacer solution can be calculated by using a brix refractometer with the following equation:

$$\text{Total Solids} = (1.128 \times \% \text{ Brix}) + 0.291$$

Tips to Ensure Accuracy and Consistency in Calf Milk Replacer Mixing

- Weigh the milk replacer powder with a scale, not the scoop provided in the bag.
- Milk replacer powder density is different throughout the bag, with the least dense powder being on the top of the bag and the denser powder being on the bottom of the bag. The amount of powder contained in each scoop is different and subsequently can lead to significant total solid percentage variations within feedings. What one person vs. another, calls a full scoop can be quite different.
- For a fun experiment have everyone on the farm that is feeding calves get together and fill a scoop with the amount of milk replacer powder they normally use to feed a calf. Weigh all the scoops to see how similar (or different) they are. The results may be surprising!
- Calibrate the mixing container for water volume. Accurately measure out water volume and make marks inside the mixing container to ensure quick and accurate water measurements for future mixing batches. Add $\frac{1}{2}$ the volume of water to the mixing container, then weigh and add the milk replacer powder. Mix the powder into a smooth solution and then fill the container to the pre-measured water volume mark.
- Measure the water temperature during mixing. Mix milk replacer powder in water with temperatures ranging from 110° F - 120° F to ensure proper fat and protein dispersion within the solution.
- Measure the milk replacer solution temperature prior to feeding.

(Continued on page 4)

Creating Consistency in Mixing and Feeding Milk Replacer

(Continued from page 3)

- Deliver milk replacer to the calves at a milk temperature that ranges from 101° F - 105° F. Milk replacer that is fed at a temperature cooler than 101° F can negatively impact the health of the calves and increase the risk of scours, bloat and reduced digestibility. Remember to measure the milk replacer temperature being fed to the first, middle and last calf for an accurate representation of milk temperatures.
- Use a brix refractometer to check that the milk replacer solution is being mixed to the proper total solids concentration at least weekly.
- Crystal Creek® Swift Start® Calf Milk Replacer % Total Solids = $(1.128 \times \% \text{ Brix}) + 0.291$
- Make sure all mixing and feeding equipment is properly cleaned and disinfected.
- Biofilms are one of a calf raiser's worst enemies. Crystal Creek® offers a full line of cleaning and disinfecting products that are effective on a broad spectrum of pathogens known to harm calf health.

HEALTHY CALVES ARE EASIER TO RAISE

SWIFT START®

CALF MILK REPLACER & CALF SHIELD®



*Call For Convenient Phone Ordering
Ships Direct To Your Farm*

1-888-376-6777

Visit us online to learn more at www.crystalcreeknatural.com



PRO TIP: each pound of milk replacer powder makes one gallon of finished solution (yielding an 11.6% total solids) so if 6 pounds of powder is being used, there should be exactly 6 gallons of milk replacer solution once done mixing. **Figure 1** shows the Swift Start® Calf Milk Replacer mixing chart; a quick reference to use for what amount of milk replacer is needed for the given number of calves being fed. If you are adding Calf Shield® to milk replacer, that inclusion rate has been provided in the chart as well.

Accurately and consistently mixing milk replacer is important and has direct impacts on calf health. Weighing milk replacer powder is more accurate, and less prone to variations, than using scoops or containers to measure milk replacer powder. Creating and enforcing consistent milk replacer mixing protocols can help improve overall calf performance.

References available upon request.

Figure 1

SWIFT START® MILK REPLACER MIXING CHART - 4 QUART FEEDING

Number of Calves	Pounds of Milk Replacer	Ounces of Calf Shield®	Total Gallons of Solution
1	1	0.3	1
2	2	0.6	2
3	3	0.9	3
4	4	1.2	4
5	5	1.5	5
6	6	1.8	6
7	7	2.1	7
8	8	2.4	8
9	9	2.7	9
10	10	3.0	10
11	11	3.3	11
12	12	3.6	12
13	13	3.9	13
14	14	4.2	14
15	15	4.5	15
16	16	4.8	16
17	17	5.1	17
18	18	5.4	18
19	19	5.7	19
20	20	6.0	20
21	21	6.3	21
22	22	6.6	22
23	23	6.9	23
24	24	7.2	24
25	25	7.5	25
26	26	7.8	26
27	27	8.1	27
28	28	8.4	28
29	29	8.7	29
30	30	9.0	30
31	31	9.3	31
32	32	9.6	32
33	33	9.9	33
34	34	10.2	34
35	35	10.5	35
36	36	10.8	36
37	37	11.1	37
38	38	11.4	38
39	39	11.7	39
40	40	12.0	40
41	41	12.3	41
42	42	12.6	42
43	43	12.9	43
44	44	13.2	44
45	45	13.5	45
46	46	13.8	46
47	47	14.1	47
48	48	14.4	48
49	49	14.7	49
50	50	15.0	50

RFV Does Not Love You Back



By Erik Brettingen, B.S.

Relative Feed Value (RFV) has been used as a method to quickly evaluate forages and make assumptions of animal performance when that forage is fed. Generally, the thought is that the higher the number the better.

While there can be some truth to this at times, RFV misses out on arguably the most important piece to the puzzle when feeding forage to cows; neutral detergent fiber digestibility (NDFD). Crystal Creek® focuses on maximizing energy corrected milk with forage by utilizing farm grown feeds in the diet. To do this, we need to dig much deeper when evaluating forages and providing the best rations for rumen health and profitable production. Other tools like Relative Forage Quality (RFQ), and better yet, the NDF digestibility, really help pin down how to maximize forage in the ration and maintain productive cows.

RFV is determined using the acid detergent fiber (ADF) and NDF values of a feed and estimates the energy available to the animal based on the ADF content and then predicts the intake of the feedstuff based on the NDF value.

The system was originally designed based off full bloom alfalfa having an RFV of 100. Lowering ADF and NDF content in the feed improves the forage drastically as measured by RFV. The issue with this is there is no consideration for the digestibility of that NDF and no correlation to how a cow really works. This can lead producers, and some nutritionists, to believe that higher NDF levels are bad and fiber levels in feeds should be reduced. This is seen more in alfalfa based forages and causes rations that are lower than ideal in overall NDF percentage (26-28%).

RFQ came as an improvement to RFV, especially for forages that contain more grass. RFQ takes a more comprehensive approach and

uses total digestible nutrients along with NDF digestibility in the equation. This helps better explain how the feed will perform in the cow, how much energy it provides, and essentially, how much digestible fiber is available for the rumen microbes.

To fully understand and estimate how cows will respond to a certain feedstuff, we first need to understand the cow and the rumen, and what makes it all work. Being ruminants, cows thrive on fiber, and more specifically digestible NDF. Digestible NDF can provide the majority of the energy in the diet as well as be the biggest driving factor of microbial protein production in the rumen. With more digestible NDF, the cow can eat more. This is what leads to more energy corrected milk. With digestible NDF being so crucial to cow health and performance, it makes complete sense to focus on maximizing it in the diet. In the industry, there is a lot of focus on expensive additives that improve milk production and components. These additives include amino acids and by-pass fats. While there is a time and a place for these additives and we do see responses with them, the initial conversation needs to be about improving NDF digestibility in the rumen because that's where the profit is for the farmer. If forages can be grown and fed that have larger amounts of NDF, but the NDF is highly digestible, the cow's supply of NDF to digest and utilize increases. This is like giving her a big gas tank with the best fuel for a cow to run on. This leads to the possibility of feeding higher forage diets that increase energy supply to the cows, improve rumen health, and increase component production and overall energy corrected milk. This is the formula for profitable dairy production:

1. Buy less from the feed mill.
2. Produce more energy corrected milk (Pounds of fat and protein).
3. Improve cow health and keep cows in the herd longer.

Figure 1

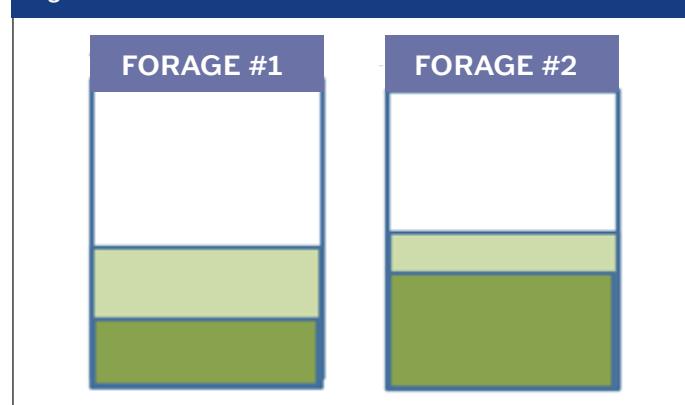
FORAGE #1			FORAGE #2		
Crude Protein	%DM	19.64	Crude Protein	%DM	20.88
AD-ICP	%CP	1.97	AD-ICP % of CP	%CP	9.25
ND-ICP w/SS	%CP	2.56	ND-ICP w/SS	%CP	17.86
Protein Sol.	%CP	58.30	Protein Sol.	%CP	54.07
Ammonia-CP	%CP	10.88	Ammonia-CP	%CP	4.05
Ammonia-CP	%DM	2.13	ADF	%DM	28.18
ADF	%DM	37.00	aNDF	%DM	42.22
aNDF	%DM	40.92	aNDFcm	%DM	40.20
aNDFcm	%DM	38.42	Lignin	%NDFcm	7.19
Lignin (Sulfuric Acid)	%NDFcm	7.22	NDFD12	%NDFcm	51.92
Lignin	%NDFcm	18.79	NDFD30	%NDFcm	70.00
NDFD12	%NDFcm	33.21	NDFD120	%NDFcm	79.25
NDFD30	%NDFcm	40.50	NDFD240	%NDFcm	81.37
NDFD120	%NDFcm	44.95			
NDFD240	%NDFcm	46.30			
RFV		150.04	RFV		147.42
RFQ		163.47	RFQ		198.70

To understand this better, above is a comparison between two forages and the impacts they have in a lactating ration.

Forage 1 has lower NDF and a higher RFV. When taking a look at NDF digestibility, only 40.6% of the NDF in this feed will digest in the rumen in 30 hours. Now compare this to Forage 2, which has a lower RFV and higher NDF value. When we dig deeper, we see that in 30 hours, 70% of the NDF will be digested by the cow! This feed, although lower RFV, has a significantly larger amount of digestible NDF for the cows to work with and make milk out of. The graphics in green give a visual representation of this. With the light green representing the total NDF in the crop and

the dark green showing how much of that NDF is digestible.

Figure 2



(Continued on page 8)

RFV Does Not Love You Back

(Continued from page 7)



Figure 3

RATION WITH FORAGE #1

RATION WITH FORAGE #2

Milk Production Predicted by CNCPS 6.55	81.95 lb.	81.55 lb.
Butterfat Predicted by NDS	4.15 %	4.4 %
Energy Corrected Milk	89.05 lb.	90.99 lb.
NDF	27.29 %	29.83 %
Starch	28.01 %	23.73 %
Total Concentrate Fed	22.33 lb.	19.08 lb.
Forage Amount of Diet	65 %	70 %
Purchased Feed Cost	\$3.83	\$3.52
Income Over Purchased Feed Cost	\$12.69	\$13.27

When added into lactating rations, the difference in NDF leads to positive changes in milk production, factors contributing to cow health, and most importantly, profitability. The key diet differences are listed in the table above.

Feeding more digestible NDF leads to 1.94 lb. more energy corrected milk feeding 3.25 lb. less concentrate and reduces purchased feed cost. This increases income over purchased feed cost by \$0.58 per cow per day. That is a profit improvement of \$211.70 per cow per year or \$21,170.00 for every 100 cows! This does

not include possible economic benefits from improved cow health.

Realizing that fiber is not the enemy, and shifting the focus towards maximizing digestible NDF in lactating rations leads to positive changes in energy corrected milk, ration economics, and cow health. If you have questions or would like to learn more about how to feed more fiber to your cows, contact a Crystal Creek® nutritionist at 1-888-376-6777 today.

References available upon request.

CRYSTAL CREEK® FLY REPELLENT

A SAFE, EFFECTIVE, NATURAL FLY REPELLENT

Flies are known to spread disease, cause stress and leave painful bites. Crystal Creek® Fly Repellent is a natural, economical tool that provides safe, effective relief from flies. In a recent efficacy trial, independent laboratory testing reported repellency rates as high as 96.7% and the lead PhD researcher concluded that the Crystal Creek® Fly Repellent "provided a high degree of repellency." The Crystal Creek® Fly Repellent showed exceptionally good performance repelling stable flies, who are known to be extremely aggressive.

Crystal Creek® Fly Repellent can be used as a spray, wiped on for more sensitive areas such as the face and ears, or used in an oiler at pasture. The versatile, oil or water based formulas can be diluted to various concentrations to best fit your operations need. As with any good fly control program, it is important to use other fly control methods, in addition to an effective fly repellent, such as keeping facilities clean of manure and waste, dumping out stagnant water and disposing left over feed to discourage areas flies may be attracted to. If you want to provide your livestock with immediate, effective, safe relief from flies, try the Crystal Creek® Fly Repellent today!



CRYSTAL CREEK® FLY REPELLENT

NATURAL FLY REPELLENT

- *Immediate, effective relief*
- *Versatile, oil or water based formulas*
- *Wipe on, spray on or use in an oiler*



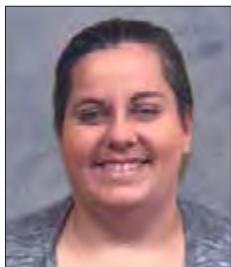
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How to Identify and Manage Heat Stress in Calves



By Cassy Golburg, B.A.
Livestock Specialist

on producer profitability. There are a variety of health issues calves experience from heat stress including dehydration, lower average daily gains, and higher morbidity and mortality rates. A study from Penn State Extension showed that calves exposed to heat stress early in life often had long term ramifications, such as smaller breeding size and an older age at first lactation. These factors ultimately play a large role in decreasing producer profit. Crystal Creek® can help producers evaluate the impact heat stress is having on their

Most livestock producers are familiar with the negative effects of heat stress in lactating cows, but the impact heat stress has on calves and heifers is often overlooked. Heat stress can not only cause a negative impact on calf health but can also cause a negative impact

calves and determine what steps can be taken to prevent long term repercussions from it.

Heat Stress Indicators

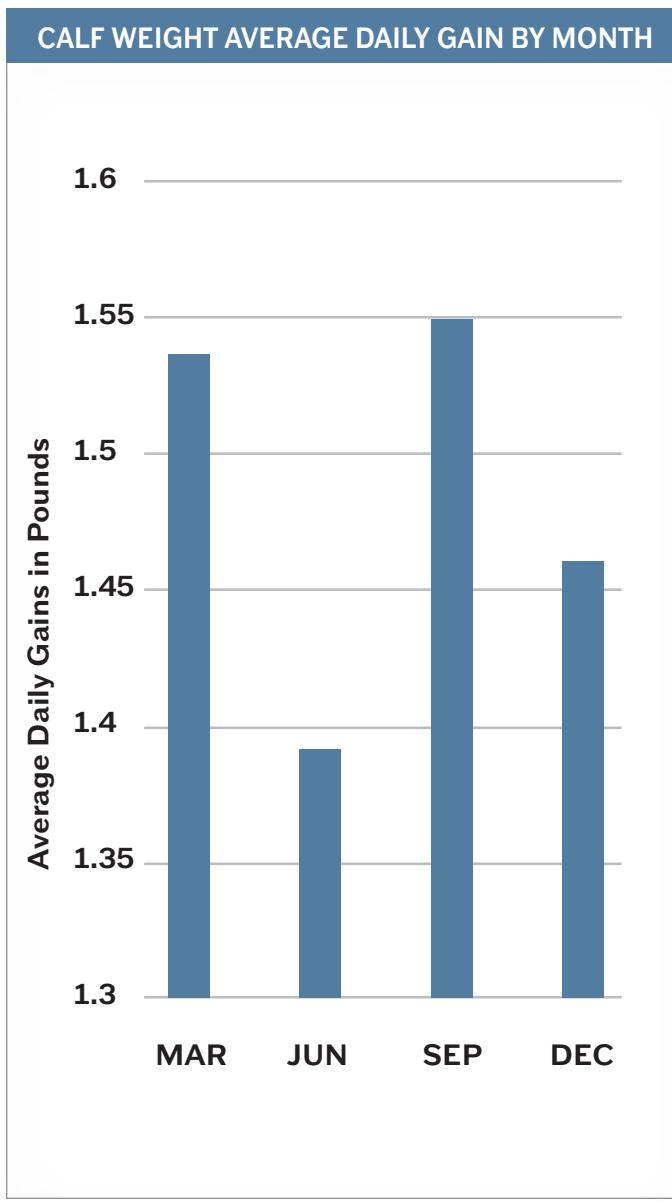
A one-month-old calf can begin to show signs of heat stress when the air temperature reaches 76° F. High humidity levels can add to further stress. A calf will need to expend more energy to keep cool during times of heat stress, thereby increasing its energy requirements. The first step in managing heat stress in calves is being able to recognize the indicators that a calf is suffering. Common heat stress indicators in calves include:

- Decreased feed intake
- Increased water consumption
- Increased respiration rate
- Open mouth breathing
- Increased standing time
- Reduced movement/mobility

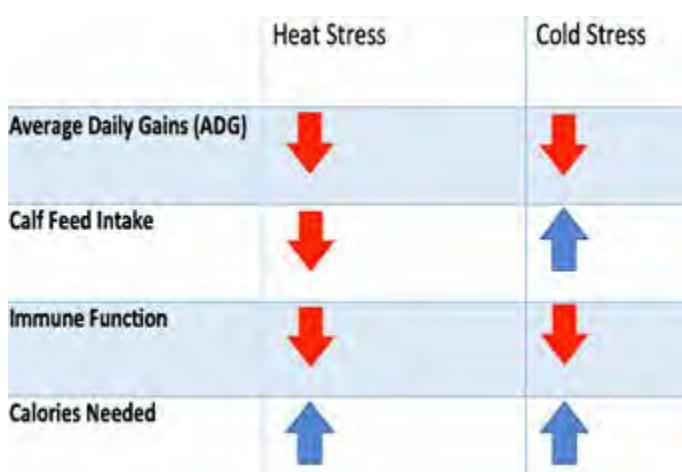


Effects of Heat Stress

Calves born in the summer often have lower average daily gains when compared to calves born in other months. A recent study conducted in Utah showed that calves born in March and September had the highest daily gains overall. Calves born in summer and winter months had the lowest daily gains. The ADG for calves born in June was lower than that of those born in December, most likely due to the calf's reduced dry matter/feed intake because of the heat stress they experienced.



A calf's energy requirements can increase significantly, up to 20-30%, during periods of heat stress. While this also occurs during winter months, calves born during colder temperatures commonly increase their dry matter intake to compensate for the additional energy demand. However, calves born during warmer months, will often decrease their dry matter intake, leading to a further energy deficit. Energy intended for growth will now go to regulating the animal's body temperature. If feed intake is decreased, rumen development in the calf will also slow down. This can make it harder for calves to transition after weaning and results in slowing growth in general.



A calf's immune function can suffer if they are not consuming enough calories on a daily basis. Periods of heat stress will cause calories that were meant for immune system support and development to instead be diverted to regulate body temperature. This reallocation of energy can have a negative effect on the immune system because the calories that would normally be used for immune function, are now being directed for keeping the calf's body cool. This results in a weakening of the immune system and a chance for opportunistic pathogens to cause illness or disease. A newborn calf may also struggle to absorb colostrum effectively, especially if their dam was also exposed to heat stress. In cases where the calf has reduced passive immunity transfer, the immune system will be weakened even further.

(Continued on page 12)

Ways to Alleviate Heat Stress

Meeting the energy requirements of the calf is important whether one is dealing with periods of heat or cold stress. Fitting in an additional feeding, or feeding a larger volume of milk or milk replacer, can help compensate for calories that have been diverted for body temperature regulation due to high environmental temperatures and lower grain intake. Feeding milk three times a day can improve feed efficiency and growth. Offering smaller amounts of calf starter more frequently can also encourage the calf to eat.

Ventilation is key in helping provide a healthy and comfortable environment for the calf. Increasing air speeds during periods of heat stress will help cool the calf. A Penn State Extension study found that calves in properly ventilated calf pens averaged 10-20 less breaths per minute than their non-ventilated counterparts, meaning the ventilated calves were losing less water from their body via respiration. For outdoor hutches, putting a block under the hutch can increase air flow thus lowering bacteria counts and resulting in cleaner air for the calves to breathe. Whether calves are housed in individual hutches or group pens, they should have adequate shade and be able to move out of full sun exposure.

Fans are another way to help abate heat stress. Fans can help assist in reducing respiration rates and ultimately improve feed efficiency. A study showed that in an environment of 84° F, adding fans increased calf feed efficiency by 21% and increased ADG by 23%. While warm weather air speeds are less strictly guided, experience has shown that airspeeds of 2.25 mph (200 feet per minute) are necessary for providing heat abatement. Fans can also help with the control of fly pressure, but additional fly control measures should always be taken to ensure the fly population is kept to a minimum and not harming calf health and behavior.

Access to fresh water is vital for healthy animals. A national survey found that the average U.S. farm does not provide calves with access to fresh drinking water until they are 15 days old. Calves should



be provided with water at 1-2 days old. Access to free choice, fresh water can improve starter intake as well as help prevent dehydration. Water consumption is critical to rumen development. A calf that has access to water is less likely to scour. Calves who scour and do not have access to water are much more vulnerable to the effects of heat stress. Rinsing water buckets daily, and making sure they are clean and sanitary, can help increase the amount of water a calf drinks in a day.

Practicing good management techniques like handling stressful activities when it is cooler can reduce the impact heat stress has on calves. Performing tasks such as vaccinations, dehorning or transportation during the morning, or cooler times of the day (or avoiding these activities all together if the temperatures are above 80° F), can be very beneficial.

It is important to be aware of how calves experience heat stress and what effect it has on your operation's bottom line. Crystal Creek® is here to help you develop an effective heat stress management strategy for your calf raising operation. With a little planning, there are many things that can be done to lessen the effects of heat stress on calf health and development and ultimately, on producer profitability.

References available upon request.



April 2022

1-3 boxes: \$10/box discount

4-9 boxes: \$18/box discount (\$10/box discount + \$8 per box existing volume discount)

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Normal Volume Discounts

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August 2022

VETERINARY DAIRY LINIMENT™

Save 10% IN ADDITION TO Normal Volume Discounts



Successful Sow Management



By Alex Austin, B.S.

A successful hog operation begins with productive gilts and sows. Making sure animals are healthy from breeding to farrowing will ensure that piglets get off to the best start possible. The Crystal Creek® Paladin® Swine Program provides a high-quality

nutrition model that produces vigorous animals. Crystal Creek® has proven products and services to offer swine producers that give a strong return on investment.

Effective Parasite Control

Parasite control is important for the health and productivity of sows in any breeding operation. Having an effective deworming protocol can help decrease potential economic loss. In U.S. swine herds, 80 to 90% of hogs were found to be infested with internal parasites. Internal parasites have been estimated to cause an annual loss of \$538 million. It is recommended to deworm sows between two to four weeks before breeding. The same should be done for boars. Another critical time to practice deworming is two to four weeks before farrowing. Deworming at this time can reduce the risk of sows passing a parasite infestation onto their piglets. The use of Pivot-FL™ and Crystal Creek® Crystal Pellets™ can assist in supporting the health of the sow in an operation's deworming protocol.

External parasite control should also be considered in an operation's parasite control program. Mites, lice and flies all have a negative impact on animal health and performance, which can result in an economic loss. Mange mites alone can reduce the average daily gain in growing swine by 11%. House flies and stable flies can cause an approximate 2% decrease in average daily gain when compared to those that implement some type of fly control. To help protect your sows against external parasites, bring them into farrowing crates washed and



cleaned. Wash sows and gilts with a gentle soap, and then apply Crystal Creek® Lice and Mange Wash™, three days prior to their expected farrowing date. Follow up with Crystal Creek® Fly Repellent™ to provide further parasite control. These products will help protect your sows against external parasites and keep them comfortable and productive.

Beneficial Cleaning and Disinfection Protocols

Piglets should be born in a clean environment. Crates or pens should be washed to remove any caked-on dirt or manure prior to use. Pens should then be cleaned with a chlorinated alkaline foaming detergent such as Chlor-A-Foam™ with hot water, using a foam gun. Cover the pen and soak for approximately 10-15 minutes. Rinse with water. Last, but certainly not least, use the Crystal Creek® HabiStat™ chlorine dioxide solution to disinfect the pen. The solution should be used at a minimum concentration of 100 ppm and sprayed on all pen surfaces for maximum protection. Allow to air dry before bringing animals into pens. More information on the use and effectiveness of the Crystal Creek® cleaning and disinfection products can be found in the April 2019 Crystal Creek® Newsletter article "Understanding Biofilms in Agriculture." Producers should have pens cleaned and disinfected three days before sows are expected to farrow.

Quality Nutrition and Animal Health Supplements

Providing sows with high-quality nutrition is crucial to the development and health of their piglets. Protein and energy values will need to be increased throughout the sow's pregnancy. After farrowing, sows can experience a decreased feed intake and go into an extreme negative energy balance, resulting in poor milk production and other health issues. While water is considered the number one nutrient for livestock, it is often overlooked. Providing ad lib water access and monitoring that adequate water intake is taking place, is very important. Studies have shown that sows with low water intake during the first five days after farrowing will have piglets with reduced growth. Working with a nutritionist to ensure all nutrient needs are being met will help sows during gestation and lactation, resulting in healthier, larger litters. To learn more about what the Crystal Creek® Paladin® Swine Nutrition Program has to offer, visit our website at crystalcreeknatural.com.

In addition to high-quality minerals and nutrition options, Crystal Creek® has animal health supplements that can be helpful with both pre and post-farrowing care:

- 1) **Super Boost™:** Available in both loose powder or capsule form, Super Boost™ is used to help provide vitamins and microorganisms to support sows once they farrow. Feeding approximately 10 grams per day to a sow can help encourage and support appetite. Once the sow farrows in, milk production requires a high amount of nutrients. What is not met through the diet, will be pulled from the sow's body. This can result in downer sows. The condition osteomalacia; the result of small fractures in the back leg bones and lumbar vertebrae, is known to cause downer sow syndrome. A properly balanced diet paired with Super Boost™ can help decrease the risk of having a downer sow, while also supporting milk production.

2) **Crystal Pellets™:** This product contains a concentrated, proprietary Aloe Vera source with natural ingredients that have been shown to have properties that help assist in decreasing inflammation, encourage stimulation of the immune system and support an increased absorption of vitamins and minerals in the gastro-intestinal tract. Crystal Creek® recommends feeding Crystal Pellets™ when sows are brought in for farrowing and to continue to feed for up to three weeks after farrowing. Feeding during this time period will help combat the extra effects of stress from farrowing and will also help support colostrum production and encourage feed intake. It is recommended to give Crystal Pellets™ orally at a rate of 1 oz. per 100 lb. of body weight. This rate can be doubled if sow is showing signs of illness or highly stressed.

3) **Fresh-N-Easy™:** Available in a capsule form, this calcium supplement is used to offer support during times of hypocalcemia. Sows can develop hypocalcemia, often called milk fever, similar to cattle, due to the demand of milk production at and after farrowing. Having a balanced ration is critical for prevention of this disease, but if it occurs, Fresh-N-Easy™ can be given at farrowing and then again 24 hours later. Sows often will become constipated when hypocalcemia occurs, so adding bran to the diet can help minimize those effects as well.

Combining a high-quality nutrition program with the proper supportive health products will help make farrowing easier and produce more successful litters. Crystal Creek® has a comprehensive line of products to help protect your bottom line. Call Crystal Creek® today to discuss how to get your pigs off to a good start.

References available upon request.



1600 Roundhouse Rd., Spooner, WI 54801

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