

Spring 2010

balance

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DOSE
COUNTS

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MAXIMUM GENETIC POTENTIAL: PART 3:
Nourishing & Managing The Growing Heifer

Balance is a magazine designed to promote dairy genetics, technology and management. The magazine is published by the Semex Alliance. The Semex Alliance is focused on global leadership in the genetics marketplace.

Semex Alliance Canadian Partnerships:



Semex Solutions

My journey over the past 12 months since taking the role of USA sales manager at Semex has definitely been one that has been highlighted with many challenges and opportunities. We witnessed the global dairy industry transition, and we took it upon ourselves to make sure that we have understood your needs and

developed solutions that will not only work for you today, but will also allow for our partnership in the future.

In this edition of Balance, you will notice that we are taking further strides in our fertility enhancements. Semex is focused on creating additional value for your operation and our launch of

the .25Plus™ straw. .25Plus™ is Semex's ¼ cc straw that will enable you to secure more pregnancies, further enhancing your operation's overall profitability. Furthermore, it will allow for Semex to remain the leading AI company with globally proven fertility, giving you the most reliable fertility partner.

April marks the one-year anniversary of our ai24™ program, and now Semex customers from New York to California are enjoying its

benefits. The response to this technology has been very significant, as dairymen are continually looking to improve reproduction on their dairies. At the same time, Semex is working to be not only your AI company of choice, but also your business partner.

Additionally, we have launched Farm Plan™ as a payment option for your business. We noticed producers are looking for an easy systematic solution to manage their finances, and we're offering this option based on your requests to provide an easy solution for your payments.

Our transition to your solutions

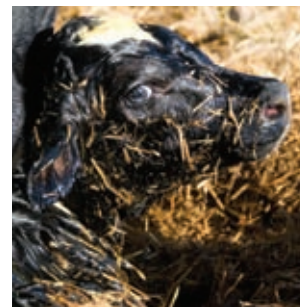
based AI company has worked well, and your business is greatly appreciated. While the industry has certainly had its ups and downs over this time, we have seen

double-digit growth in our USA business over the past 15 months. This growth is the direct result of partnering with you and offering solutions for you and your dairy.

We appreciate your business and look forward to our continued partnerships.

Paul B. Krueger

Semex Alliance Director, Sales and Business Development, USA



On the cover: New born calf at La Travesia Farm in Spain. Photo by Paco Ahedo.



Focus on Fertility

Just like on the dairy, **every dose counts** at Semex. We work hard to ensure that each and every dose stamped with the 200 stud code is the very best product available, from the bull to the farm tank. Semex's focused and dedicated staff prides itself on exceeding industry standards for sire care, laboratory, warehouse and transportation services. This commitment to excellence and belief that **every dose counts**, guarantees that Semex sires are the most reliable, fertile and profitable choice for dairymen everywhere.



Semex high fertility Repramax™ sires are the best of the best for semen fertility. Repramax™ utilizes Sire Conception Rates, Agri-Tech Analysis and Non-Return Rates to establish the world's only international fertility evaluation. **Repramax™ sires are highly reliable bulls with no genetic sacrifices, ensuring that each pregnancy is a valuable one.**



Semex researchers have developed Reprmix™, a pooled semen product, to provide dairymen with one powerful 'cocktail' to fight infertility. **Each 'cocktail' is a high fertility package that provides proven genetics to fit producer's specific needs.** Each sire has been chosen after careful evaluation for semen quality and non-return rates by Semex laboratory and genetic staff.



Optimizing conception rates are key to the success of any breeding program. With proven results of 2% higher conception rates, the Semex .25Plus™ straw arms dairymen with an additional \$5 in value per straw, **making the switch to the .25cc straw not only logical, but profitable!**



ai24™ is Semex's Solution for Efficient AI. The centerpiece of this innovative reproductive management program is Heatime™ the 24-hour a day, 365-day a year heat detection system. **With this program dairymen can expect increased pregnancy rates, fewer health problems, reduced labor costs and more cows back in the milking line sooner.**



Looking to increase profitability and create solutions on the dairy, Semex's research & development arm, L'Alliance Boviteq (LAB), is diligently working to utilize the newest technologies available. **These projects are aimed at increasing fertility, implementing new technologies and making AI more efficient and profitable.**



Real Repromix™ Results From Real Dairies



Brenda Lee-Turner, Semex Alliance Marketing Communications Specialist

Getting your cows bred as quickly as possible is our number one goal at Semex. Part of the Semex's arsenal of programs developed to increase your profitability and reduce expenses is the Semex Repromix™ product.

Semex researchers have developed Repromix™, a pooled semen product combining three high fertility sires into one powerful "cocktail." Each "cocktail" is a high fertility package that provides

proven genetics to fit producers' specific needs. Each sire has been chosen after careful evaluation for semen quality and non-return rates by Semex laboratory and genetic staff.

The theory behind Semex's Repromix™ product is related to a phenomenon called capacitation. Capacitation is a series of changes all sperm from mammals must undergo while in the female reproductive tract in order to fertilize an egg. This process includes the modification

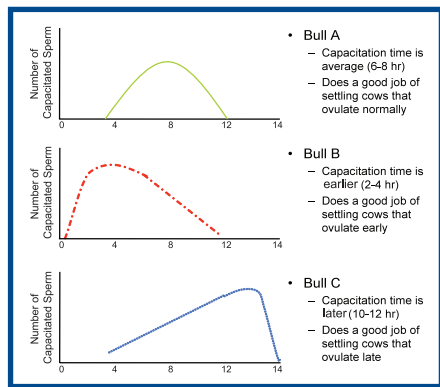


FIGURE 1.

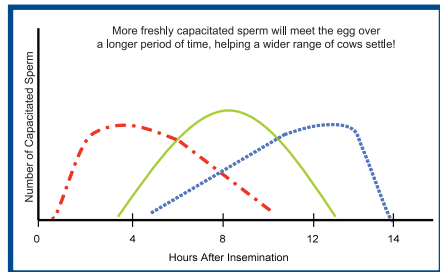


FIGURE 2.

of proteins on the outside of the sperm cell caused by the cow's reproductive tract. Without this process, sperm cannot fertilize an egg. As timing with all reproduction is key, the time needed for the capacitation process to occur varies from species to species and in our case, from bull to bull.

"Based on our theory, bulls can have different capacitation profiles," says Tom Kroetsch, Semex Alliance Director Production & Quality Control. "But (all sires) will still have very good fertility when used in normal fertility cows in most herds with good reproductive management."

In general, the time line for capacitation in bull semen is generally 4 to 12 hours, but as shown in Figure 1 there appears to be early, average and late capacitating bulls.

"Semex's Repromix™ combines the semen from three bulls with complementary capacitation profiles," says Kroetsch. "This makes more healthy sperm available and ready to fertilize an egg in a hard to settle cow, over a wider window of opportunity than what just one bull can manage.... 12-14 hours versus just 4-8 hours."

Each one of the three sires in a straw of Repromix™ is proven to have high fertility and high overall semen quality, along with the standard Balanced Breeding that backs all Semex sires. With each bull having a unique capacitation profile, Repromix™ offers more freshly capacitated sperm to meet the egg over a longer period of time, helping to settle the repeat breeder. See Figure 2.

Real information collected in 2009 on large US dairies using Repromix™ backs up this theory, and Rissa Mitchell, Semex USA Dairy Genetics Training Coordinator, analyzed over 3500 observations of pooled semen breedings.

"We received Dairy Comp 305 backup files from four large commercial herds that had used Repromix™ over the course of the past several years, including numerous uses of Repromix™ for first

and second services," says Mitchell.

"In these particular herds, reproductive performance and simply getting cows pregnant takes precedence over sire identity. In an effort to improve conception rates and reduce days open, the herds had recently used Jersey sires exclusively. Our hope was to show that using Repromix™ could produce Holstein replacements while still offering improved reproductive efficiencies for these herds," says Mitchell. "Although this analysis was not part of an organized scientific study, nor were there enough observations to determine statistical significance of our findings, we are confident this is a real representation of this dairyman's experiences with Repromix™."

On these herds, utilizing Repromix™ proved very valuable, with improved conception rates across all breedings, with advantages shown year round over conventional semen conception rates as seen in Figure 3.

With higher conception rates, dairymen can look to Repromix™ to reduce the number of breedings and related semen costs on the dairy, raising profitability and increasing the real value of each

FIGURE 3: CONCEPTION RATE COMPARISON OF BOTH CONVENTIONAL & POOLED SEMEN IN 1ST - 4TH SERVICES

	Conventional		Pooled Semen	
	Annual	Summer	Annual	Summer
All Services	32.6	31.0	37.3	34.5
1st Service	33.9	33.3	39.7	38.3
2nd Service	34.6	33.0	39.7	39.1
3rd Service	34.0	31.2	41.2	38.8
4th Service	27.4	24.7	30.8	24.8

* Semen Type: Conventional includes all AI services where frozen semen from one particular sire was included in the straw. Pooled semen includes only AI services to straws containing multiple sires.

**Breeding Season: Annual includes all services regardless of month of service. Summer includes only services that took place during the months of June through September.

dose of Repromix™ semen.

One of the herds had 3,122 cows with average herd conception rate of 32.6 and a heat detection rate of 61.6, projecting an annual semen purchase of 9,577 doses.

"Using Repromix™ for first service showed an added value of \$16.14 per unit of Repromix™ versus conventional semen," says Mitchell. "Across all services, Repromix™ still exhibits a potential added value of \$13.06 over conventional doses and can significantly reduce the total number of units needed to breed the herd on an annual basis."

Real results from real dairies tell us that Semex's Repromix™ has the power to improve conception rates, resulting in increased profitability and reduced expenses. Ask your Semex Representative today about Semex's pooled semen "cocktail", Repromix™.

Benefit of Using Repromix™ 1st Service: 3122 Cow Herd			
	Conception Rate	Exp # PGS	
Repromix™	39.7	3802	
Conventional	33.9	3246	
	Value/PG	Total PG Value	
Repromix™	\$278*	\$1,056,956	
Conventional	\$278*	\$902,38	
	Added PG Value	Est. Doses Purchased	
Repromix™	\$154,568	9577	
Proj Value/Dose With Repromix™: \$16.14			

FIGURE 4.



* (DeVries, 2006)



Profitable Outcross Sire LANCELOT...

Mike West, Semex Alliance Sire Analyst & Product Support Specialist

When we think about what is important in a dairy cow we quickly identify traits that translate to profitability and a long career in the milking herd... Breeding back easily, producing well with good components and having udders built to last.

Semex's Health\$mart™ sires are specifically identified for these traits, making it easier for dairymen to put these profitable sires to work. In January 2010, Semex added 0200HO02082 Bomaz Lancelot (98%-I), a Lancelot son proven through its USA Premier™ program to Semex's Health\$mart™ line-up.

Lancelot's pedigree makes him very interesting, offering an outcross pedigree while still being one of the top bulls in the industry.

As a son of the German bull Lancelot, his pedigree is more than just an outcross due to his sire. On the maternal side his pedigree is filled with excellent production and high classification scores.

Not only was Lancelot's Rubytom dam scored EX-91-2E, but both she and his grandam produced over 36,000 lbs in 305 days in their second lactations. This unique pedigree has made him a stand out from contemporaries, but has also drawn worldwide attention from other AI centers that are looking to use him as a sire of sons.

Analyzing Lancelot on paper it's easy to see that he has many of the traits dairymen look to when looking for profitable sires. He posts excellent figures for milk production, components, mammary systems, with above average fertility in both the USA and Canadian systems, predicting his daughters' will to live and contribute. Proven through his first crop of daughters, Lancelot is an excellent transmitter of profitability traits.

Premier™ Consultant Cam Davis echoes Lancelot's profitability based on what he's seen in the field. "I've inspected four daughters in one herd in New York. All four bred back on their first breeding by 65 days and all four have an ME of over 29,000 lbs."

In the field, Lancelot progeny show a very consistent and pleasing breeding pattern. Sampled in some very large and competitive herds, the Lancelots have had

to work extra hard to prove themselves to be profitable. Breeders that used Lancelot as a young sire have been very satisfied with their return on investment, with many Lancelots being among the most profitable animals in their two year old groups.

Constantly delivering high levels of milk production with outstanding levels for components have driven breeders to go back and use Lancelot again as a proven sire.

Perhaps most impressive, however, is the Lancelots' mammary systems. These cows have an ideal rear udder shape and strength of attachment, while their fore udders have the strength that will help support and contribute to his longevity scores. Their udders are shallow, well-attached and have a very correct teat placement, enabling them to be very healthy and profitable.

Owners describe their Lancelots as trouble-free, low maintenance individuals with an aggressive will to contribute to the herds' success.

"I've inspected four daughters in one herd in New York. All four bred back on their first breeding by 65 days and all four have an ME of over 29,000 lbs."

Cam Davis, Premier™ Consultant

Johnson Lancelot 356
Photo by Nick Sarbacher

No matter how you look at Lancelot, it's easy to see how he spells profitability. Whether evaluating him on paper or in the barns, these cows are easily considered to be some of the most profitable in herds.

Lancelot combines many traits dairymen need to increase profitability, and his outcross pedigree adds to his popularity, making him an ideal candidate for all mating programs worldwide.

Kestell 'Pleasantly Surprised'

By Ron Johnson, Agri-View Dairy Editor, Reprinted with permission from Wisconsin Agri-View



Photo by Beth Herges

Got milk? You most certainly do if you've got Ever-Green-View My 1326-ET in your herd. You've got some 134,000 8-ounce glasses of milk. That's more than 8,300 gallons.



Ever-Green-View My 1326
EX-92-USA

This registered Holstein recently posted a new US production record. My 1326 not only broke the old record, but shattered the previous one that was 67,914 pounds. My 1326 made 72,170 pounds of milk during her 365-day lactation, on three-time-a-day milking.

Tom and Gin Kestell, Waldo, Ever-Green-View Farms, are the owners and breeders of My 1326. Tom has been breeding registered Holsteins for more than 50 years, since he was 9 years old.

My 1326 is no slouch when it comes to churning out fat and protein, either. Her record includes 2,787 pounds of fat and 2,142 pounds of protein.

A number of factors have to combine for a cow to produce that much milk. The foundation is the cow's inherent potential.

"You have to provide the genetics," says Tom. "And then you have to provide the environment, the feed and the everyday care."

My 1326-ET certainly has the genetics going for her. Her sire is 0200HO00044 Stouder Morty. Tom says Morty has always been "an extreme milk bull. He's big framed and produces daughters with good udders."

When choosing a sire, Tom looks for bulls whose daughters have a blend of production and type. He also wants bulls whose daughters produce "a balance of fat and protein" and that "will last a long time." He adds, "We have several other Mortys in the (Elsie) cow family that are also good cows."

My 1326 is a granddaughter of Ever-Green-View Elsie-ET. Elsie made 52,580 pounds of milk during a 365-day lactation. Her daughter, Ever-Green-View Elegant-ET, is a sister to My 1326's dam. Elegant also cracked 50,000 pounds, milking 53,910 in 365 days.

The family history of high production doesn't stop there. My 1326's third dam back – Ever-Green-View Le Grant-ET – cracked the 50,000-pound barrier, with 50,280 pounds of milk. And My 1326's fourth dam back – Ever-Green View Leisure – came close with a record of 48,190 pounds.

To milk heavily, it's not enough for a cow to possess the right genetics. Tom says she also has to put her genetic heritage to work.

'by Cow's Record Production

"The biggest thing is getting these cows to express their genetics," he says. "You never set out thinking that you're going to set a state or national record...You just try to do the best you can every day and let the chips fall where they may.

"When this cow calved," he continues, "I never dreamed she was going to set a new record. She looked great and she was doing great. But everything had to happen right. They can't get sick; they can't hurt a foot...We had a cool summer last year. That helped her out. The cow was never stressed all year."

My 1326 began her lactation in early February, a good time to start, according to Tom. That winter start meant she was already at peak milk production when July and August – often two of the hottest, most humid months – rolled around.

This cow averaged 198 pounds of milk per day. She peaked at "only" 225 pounds a day, says Tom.

"A lot of cows in Wisconsin peak at 200, but they don't sustain it," Tom observes. My 1326 holding her peak relatively long was a "combination of genetics and care," he says.

Yet, Tom adds, My 1326 did not receive any "special care" – just good care like the rest of his herd. That good care includes plenty of fresh air, by way of tunnel ventilation in the Sheboygan County operation's comfort stall barn.

Like many of the other 85 cows the Kestells milk at any one time, My 1326 calls "home" a stall fitted with a rubber mattress bedded with straw.

Tom and Gin and their son, Chris, who farms with them, do not feed a complicated ration, either. It's simply a one-group total mixed ration (TMR).

The ration is 69 percent forages and 31 percent concentrate. Corn silage and haylage are at nearly 50 percent each, with a bit of baleage fed, too.

The Kestells grow 80 acres of soybeans.

They sell some and have the rest roasted to feed as a protein source. Tom says his alfalfa tests at 22 percent protein and has a relative feed value (RFV) of 150 to 160.

Brown midrib corn, for silage, is a mainstay, because of its better digestibility. The Kestells grow practically all of their feed – 200 acres of alfalfa and 160 acres of corn. Cows in the Ever-Green-View milking herd also get 3.5 pounds a



"She isn't our biggest cow, but she's probably the widest cow we have," Tom says. "She has a lot of capacity and is also efficient. Capacity is important, but efficiency is more important."

Photo by Agri-View

day of purchased feed that contains vitamins, minerals and a bypass protein. Comments Tom, "It's not an exotic ration."

My 1326's herdmates – although not at her lofty production – fill the bulk tank quite well. The farm's rolling herd average (RHA) on 130 cows is 35,151 pounds of milk, 1,351 pounds of fat, and 1,083 pounds of protein. Tom says they've been above the 30,000-pound mark a dozen years.

At a weight of 1,800 pounds, My 1326 is a good eater. Tom figures she might consume 70 pounds of dry matter a day, while most of the other cows eat 55 pounds.

"We don't measure how much each individual cow eats. We just try to keep feed in front of all the cows," says Tom.

Far more important than the amount of feed a cow eats is what she does with it. My 1326 has the ability to convert much of her feed into milk.

"I think, in our business, we forget about that," he continues. "Sometimes dairymen are just trying to get the cows to eat more and more and more. Cows that milk 100 pounds and 180 pounds are probably eating very similar amounts of feed. But the one milking 180 pounds is much more efficient."

The Kestells raise all their own calves, including bulls. They sell some 100 bulls annually to AI studs and farmers. Tom says, "If you don't have healthy baby calves, you won't have healthy heifers and you aren't going to have healthy cows."

Their Ever-Green-View prefix has become

so well known that cattle and embryos now account for the bulk of the farm's income.

"Our main focus is selling genetics," says Tom. "Two-thirds of our income is from selling genetics. One-third is from milk."

To get his registered Holsteins' genetics into more herds, Tom has worked out an "embryo share" program. He lets other breeders place embryos from his cows into their recipient cows. Once the calves are born, the other dairyman and Tom take turns choosing calves.

That's what happened with My 1326. She was born on the farm of Kevin Ihm, Barneveld. Ihm registered the calves by way of the internet and decided to use numbers in their names. Ihm got calf number 1325, while Tom got 1326.

Tom has only two cows that have numbers in place of portions of their names, and My 1326 is one of them.

"If she had been born on our farm, we would have not numbered her. She would have a name," he says.

The Kestells have sold cattle and embryos to dairy farmers just down the road and also all over the world.

"This cow family (that came to prominence with Ever-Green-View Elsie, the grandmother of My 1326) is really big in Europe right now," Tom says.

"The No. 1 production bull in Holland right now is an Elsie great-grandson."

In addition, Tom notes that in this past January's genomic summary, four of the top seven genomically tested Holstein cows in Europe came from the Elsie family.

The Kestells purchased Tempo, the great-grandmother of Ever-Green-View Leisure, who is the grandmother of Elsie. Leisure, who scored Excellent 91, was the first Excellent cow in the Elsie family. That means My 1326 has five generations of Excellent cows in her ancestry. My 1326, a 4-year-old, has also been scored at Excellent 92.

Can Ever-Green-View My 1326-ET break her own milk record? Or will a different cow in the Kestell herd achieve that?

Tom isn't making any predictions. But he does say, "This cow is not a freak of nature. I'm not shocked that this cow made this record. I'm pleasantly surprised."



“My employees and I are able to use our time more efficiently. We have cut down the time checking for sick animals, we don’t check for visual heats anymore and we do not give nearly as many hormone shots as we used to.” Greg Messing, Bad Axe, Michigan

Ashley Messing, Semex USA Northeastern Michigan DSR and Reproductive Specialist

When Greg and Shelly Messing of Bad Axe, Michigan made the decision to invest in the ai24™ Heatime® system they did not realize all the benefits that would come along with it. Initially, they heard about the Heatime™ system from their Semex District Sales Representative, but after visiting with ai24™ Program Manager Chris Sheahan, Greg knew it was something he wanted to install on the farm.

There were two major advantages that Greg and Shelly saw that pushed them to make the Heatime® purchase: the low activity report; and the ability to use it with his breeding age heifers.

The Messing family was hoping to gain an edge on detecting sick cows with the low activity report and after installation, the low activity report has become vital to the fresh cow program on this 180-cow dairy. The ability to prevent deaths and reduce cull cows is something Greg has been working toward on

his operation for years. Heatime® has become the perfect tool to help this dairy achieve the goal of lowering their involuntary cull rate.

Detecting heifers in heat was also a main reason why the system was installed on the operation. The heifers are not on a high traffic part of the farm, and because of that Greg felt this was an area Heatime® could assist in greatly. In effect, the system is doing the work for him – watching for heats 24/7. Although these were the two most important areas to the Messing family, they were also hoping to improve their conception rate and decrease their use of hormones.

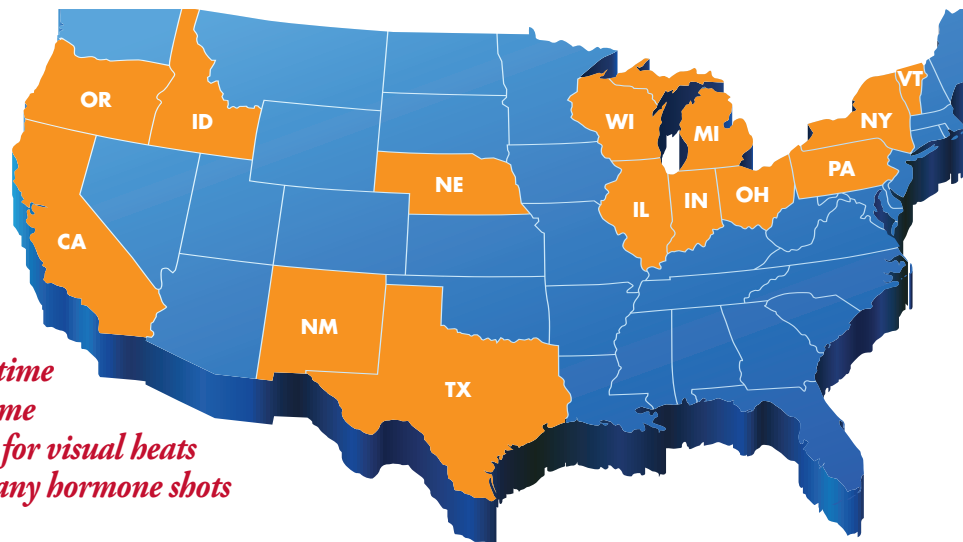
“Now that the system is installed we have seen so many more benefits than we ever dreamed we would,” says Greg. “We did not use many hormones before the system, and now we use almost none. We have stopped watching for visual heats and our breeder no longer walks the cows. Instead, he goes to the (ai24™) box and gets the cows needing to be bred from

there. It is also catching low activity cows a few days before they begin showing symptoms. The Heatime® system has done everything we wanted and more.”

Greg said that the system is helping him make more money by increasing profitability and lowering his employee costs.

“My employees and I are able to use our time more efficiently,” Greg says. “We have cut down the time we spend checking for sick animals. We don’t check for visual heats anymore and we do not give nearly as many hormone shots as we used to.”

Initial results are showing a dramatic increase in conception rate for the farm. During the first pregnancy check since the first Heatime® breedings, 90% of cows checked were confirmed pregnant. With a goal of increasing pregnancies on the dairy, Heatime™ and Semex’s ai24™ will continue to make a real difference on the Messing dairy, increasing profitability and reducing expenses.



ai24™ WORKING FROM COAST TO COAST



Front Row: Ryan Rider. Middle Row L to R: Sarah Rocha, Joe Rocha, Lisa Rider, Jody Rocha & David Rocha. Back Row: Michael Rider

R&R Dairy in Tillamook, Oregon hasn’t looked back since installing their ai24™ Heatime® system in September 2009.

“At the time we were presented with the program, we were having issues of our cows being locked up too long for chalking and heat detection, repeat breedings and cows out in milk,” says Lisa Rider, herdsman at R&R Dairy.

“We were impressed with the fact that we were able to eliminate an outside breeder, but had the comfort of knowing that heat detection would

be a 24/7 management tool. The overall concept of the program came at the perfect time and we have never regretted purchasing the program.”

On this herd of Holsteins and Jerseys, owned by David & Jody Rocha and Joe & Sarah Rocha, old breeding protocols included using an outside breeder, visual detection and chalking.

David and Jody Rocha have been in business for 44 years, relocating to Tillamook 17 years ago when they began a partnership with son Joe and his wife Sarah on this 1000 acre farm nestled in the prime agricultural land in the center of Tillamook County in Oregon. Located 75 miles west of Portland, on the north Oregon Coast, R&R Dairy is a member of the farmer-owned cooperative, Tillamook County Creamery Association (TCCA).

Founded in 1909, Tillamook Cheese is known nationally for premium quality and has grown to approximately 110 dairy families from the desire of a handful of farmers to ensure that cheese produced in the area was

of the absolute highest quality. These standards are called “The Tillamook Tradition” and revolve around supporting local and state dairy industries and being stewards of the environment.

Working with brother Joe on the breeding program, Lisa says the switch to ai24™ Heatime® was so simple and intuitive that they were able to begin using the system before official training from their Semex and Micro representatives.

“Heatime® is a very user-friendly program and we were able to start using the program prior to our training,” Lisa comments. “Now we rely solely on Heatime® for our heat detection. No more chalking, we just review information Heatime® gives us twice a day and breed accordingly.”

The system’s results netted immediate benefits beyond reducing labor.

“We are extremely happy with the program,” Lisa says. “We found that cows with so called ‘silent heats’ are nearly non-existent. And, we’ve been able to increase our pregnancy rate significantly. We were able to eliminate an outside breeder and now Joe does all the breeding. It’s efficient and much less time consuming. Her (the cow’s) number appears on Heatime™ and you breed her.”

Like many other members of TCCA, the R&R herd’s 1,000 acres consists of mainly grassland. Their breeding goals go beyond just getting cows pregnant. Cows at R&R are bred for functional type, particularly focusing on strong udders and feet & legs, making Semex sires a perfect fit.

“We’ve had great results getting cows pregnant using Semex’s 0200JE00990 Sunset-Canyon RP Militia, 0200JE00994 Forest Glen Hallmark Kirk and Holstein sire 0200HO0402 Mainstream Manifold,” says R&R co-owner Joe Rocha.

Working together, Semex and R&R are increasing profitability and providing real results on this real dairy.



Photo by Frank Robinson

Chris Sheahan
Semex USA's ai24™ Program Manager

Willie Tait
Semex UK Technical Manager

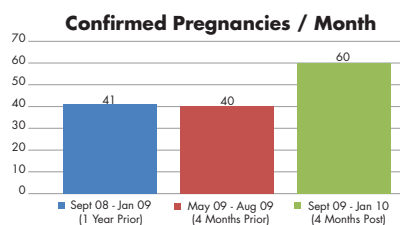
Since its USA launch in April 2009, ai24™ has caught the attention of dairymen looking to increase profitability by incorporating new technologies into their breeding programs. Now, with over 450,000 collars in 2,500 herds worldwide, progressive dairymen appreciate its proven results and simplistic approach.

USA ai24™ users tell us that the system has paid them back in several different ways:

- 1. Reduced labor costs:** after installing the ai24™ system, dairymen are telling us they've significantly reduced labor costs by eliminating tail chalking, visual heat detection and slashed the amount of time their breeders are putting cows in head locks
- 2. Low activity reports:** the system automatically alerts dairies when a cow's individual activity drops below her normal levels. This quickly identifies potentially sick cows, often 12-24 hours before typical visible signs are apparent
- 3. More pregnancies per month:** ai24™ users tell us they're getting many more pregnancies per month and have a lower percentage of cows open after 150 days in milk
- 4. Saved money:** Drug and labor costs reduced with no more timed breedings
- 5. Made money:** Keeps the cows more productive by reducing time in head locks

Recently, a Midwest dairy that installed ai24™ in the Fall of 2009 reported

a significant increase in reproductive categories that easily translate into additional profits such as increased confirmed pregnancies per month (herd size remained constant). These findings, although not statistically significant, tell us that the real results on this real dairy indicates that the ai24™ system is not only efficient, but also extremely profitable and valuable.



After installing the system, this dairy is averaging nearly 20 additional pregnancies per month than in either of the previous time periods analyzed. The University of Florida, led by Albert De Vries, conducted a study analyzing the economic value of a pregnancy. At an estimated \$278/pregnancy, an additional 20 pregnancies per month is extremely significant financially and is swaying many dairymen to look closer at the ai24™ system.

Contact your local Semex representative to find out how ai24™ can help improve your reproductive performance and your bottom line.

"We have installed around 725 ai24™ units to date, with over 60,000 collars. Cow numbers in the herds range from 50 to 1300, with an average of around 160 head and initially buying 80 collars per farm. We are seeing significant evidence of farmers coming back to buy more collars after their initial purchase, as they are so pleased with the system.

The level of customer satisfaction is extremely high – we have never had such positive feedback on any product before. This is due to several things. First, the technology works – it finds many cows that farmers have not seen in heat. Very often, after just a few weeks using it, many farmers trust the system so much they will breed cows based on what the system tells them.

It is also very cost-effective. It only takes a reduction in Calving Interval of 10 days for ai24™ to pay for itself within a year or so. Many farmers have achieved much more than this. As a result we are seeing farmers in our ai24™ program being able to use higher value semen as they are confident that they will get a pregnancy.

Last, it is simple – press a few buttons and you can see which cows are in heat and when it's best to inseminate them, and also if any are ill. If you want to link to a PC the option is there. Any of our customers who have used the system have also reported great satisfaction."



Higher Pregnancy Rates =

Mark E. Carson BSc. (Agr), MSc., Gencor Herd Reproduction Analyst

The two most important outcomes for a dairy cow is her milk production and reproductive performance. If either of those fails, her career as a lactating dairy cow can quickly come to an end. Many dairy producers and researchers in the industry feel that a herd cannot have both great milk production and excellent reproduction. The feeling is that an antagonistic relationship exists; as milk yields increase, reproduction must suffer.

But is that really the case? It's a highly debated question.

Measuring conception risk has been the traditional method used to reflect the reproductive performance of a herd. Although conception risk shows the efficiency of the semen being used, it does not necessarily reflect the fertility of the herd.

Rather, it reflects herd management practices, such as timed A.I. programs efficiency, insemination technique, housing, transition, health and heat detection accuracy.

Over the past two decades, more aggressive breeding protocols have been developed in an effort to keep cows closer to their peak milk yield, thereby making herds more profitable. The focus of these protocols is to increase the herd's pregnancy rate by breeding cows in a timely and consistent fashion, making conception a less effective measure of herd fertility.

Pregnancy rate measures the speed at which cows eligible to become pregnant actually became pregnant over a given time frame. The normal time frame is 21 days, the length of one estrus cycle. Basically, pregnancy rate answers two important questions: 1) Are your cows getting bred; and 2) Are they getting pregnant from those breedings?

So, is there evidence that having a higher pregnancy rate results in more milk from your herd? Let's look at two different datasets that examine milk yield and pregnancy rates.

The trend of increasing pregnancy rate causing increased herd level milk production has been shown in a large study conducted by University of Guelph. This study used CanWest DHI records from 3,297 herds across Canada in 2005 and the study accounted for the effects of herd size, lactation, breed and housing. The results showed that as pregnancy rates increased at the herd level, so did herd average mature equivalent milk yield. The computer-modeled DHI data showed that for each 2,204 lbs of herd mean mature equivalent milk was associated with an increase of 0.7 points

of pregnant rate. This study shows at a herd level that both high milk yields and good reproductive performance can coexist.

Carl Barclay, Westgen Product Support Specialist, looked at 208 herds' reproductive performance and compared it to herd average milk yield.

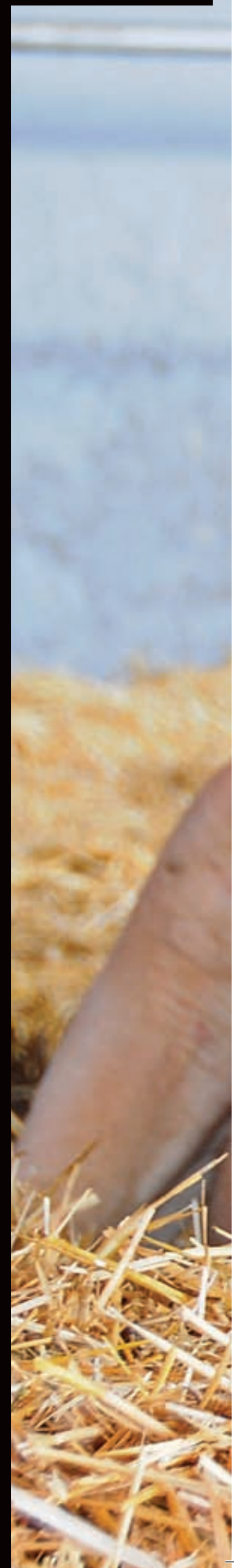
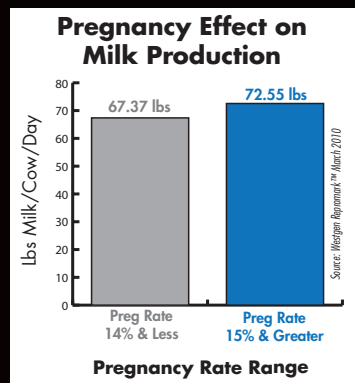
"I did the study to see if reproductive performance had an effect on milk production levels in herds," says Barclay. "A higher pregnancy rate means the herd is more efficient when it comes to reproduction, but I wondered if it also mean that they will be more productive milk cows?"

"With the data we collect from herds taking part in our Repomark™ program (Repomark™ is a reproductive benchmarking program for Westgen customers) we were able to confirm the positive relationship between a higher pregnancy rate and increased milk production. With a higher pregnancy rate, herds are able to keep more cows at peak lactation resulting in higher average milk production. Being able to link well-managed reproduction to improved milk production shows how important reproductive programs are on farm."


His research showed that herds with a pregnancy rate of 14% and lower produced on average 67.37 lbs of milk, while herds with a pregnancy rate of 15% and greater had average daily milk yields of 72.55 lbs. That's a 5 lbs difference! For a herd of 100 cows, averaging \$12/cwt that could mean an extra \$20,000 of revenue per year.

Now, this does not mean that the moment your herd hits a pregnancy rate of 15%, your herd will instantly produce an additional 4 lbs/cow/day. But, the longer your herd holds that higher pregnancy rate, the longer your cows will stay in peak milk production and the more profitable your herd will become.

Another interesting point from Westgen's data showed that on average, herds with pregnancy rates at or above 15% used six less cows to produce 220 lbs of fat/day. This shows that higher pregnancy rates equal higher efficiency from your cows.



More Milk



The results of both the University of Guelph study and the Westgen dataset both suggest that there is a link between herd pregnancy rate and milk yield. When thinking about herd performance from the “10,000 ft view,” this relationship makes a lot a sense. **For cows to have excellent milk production, they must be provided with proper nutrition, optimal environment and first-rate management. The same factors for optimal milk production are needed for reproductive performance as well.**

These improvements in milk production highlight the need to focus on pregnancy rates. Ask your Semex representative about how your herd’s pregnancy rate has an impact on your herd’s milk production.



SEMEX PREMIER™ A CONSISTENT INFLUENCE AT RINGA-LEA DAIRY

Nick Sarbacher, Semex USA Premier™ Consultant

Ringa-Lea Dairy near Barronett, Wisconsin is a family operation owned by Greg, Cheryl, Tyler (wife Becca and children, Charlotte and Max), Nathan (fiance Heidi), and Kannen Odden. A diversified agri-business, the dairy has 420 Holstein cows housed in naturally ventilated free stall barns. The Ringa-Lea name comes from a combination of Greg's home farm Ringabu Farms and Cheryl's home farm Alfalfa-Lea. Greg Odden overlooks all areas of the operation and helps with the daily cow responsibilities. Son Nathan takes care of the feeding, breeding and vaccinations on cows and heifers.

In March of 2003, the Oddens moved from the cows' previous home of three different tie stall barns, to their current parlor and first free stall barn. In January of 2008, a special needs barn was added to accommodate calving pens and post-fresh milking cows. Ringa-Lea has six full-time employees and six part-time employees. All of their own replacements are raised by the operation. Cheryl takes care of raising bull calves up to 220 pounds and has a market established for bulls in the surrounding four state area.

Ringa-Lea also runs 1,250 acres of cropland with 600 being corn, 400 of alfalfa, 150 of small grains and 100 of grass hay. They do all of their own fieldwork except for the hiring of a custom chopper. The Odden family also has a custom combining business and a contracted crop spraying business under the name TYNKA which sprays around 25,000 acres a year. This division is headed up by Kannen, and is assisted by Ringa-Lea's head mechanic Tyler who also does repair work for others.

Nathan takes care of the breeding program at Ringa-Lea Dairy. He began using Semex Premier™ young sires more than five years ago and has recently become a Semex Premier™ Club Gold herd. Nathan has been very pleased with the fertility results from Semex sires, noting the Semex results have been astonishing compared to other companies' sires that he has used.

Semex sires are used on the majority of the milking herd and are boasting a 41% conception rate across all services with an average of 2.5 services per conception. Other companies' sires currently are averaging 37% conception rate with variable results.

Not only is Nathan impressed by the fertility of the Semex Premier™ young sires, but he also is convinced that Semex sires have given him a much more consistent group of cows in the herd.

"The cows resulting from the use of Semex young sires seem to be a more tighter group, with less outliers. They just seem to be more balanced than what we've found with other studs," says Nathan.

Some of the first milking daughters of Semex sires have been performing well in the herd including four of the first crop daughters of 0200HO02005 Glen-D Haven Bando who was a Semex Premier™ graduate in January 2010. A BW Marshall from a VG-88-6YR-USA GMD DOM Aaron from five more VG and EX dams, Bando delivers impressive type and dairy strength with great udders. Additionally, Bando offers low Calving Ease at 7% from a solid +2.11 PTAT, +2.27 UDC and +2.73 FLC.

Dairyman will appreciate his type, giving excellent Foot Angle at +3.15 and +2.65 Feet & Legs score with exceptional udders at +2.51 Fore Udder Attachments, +2.82 Rear Udder Height, +2.42 Rear Udder Width, +2.13 Udder Cleft and +2.66 Udder Depth. Very few new releases can deliver this kind of solid type proof, destined to improve with a 7% Calving Ease (USDA-G 04/10).

Bando's daughters show this great type and will to milk. Daughter Ringa-Lea Bando W163 scored GP-82-2YR-

USA and had 27,210 ME lbs of milk with 4.0% 1,088 lbs of fat and 3.3% 898 lbs of protein in 305 days. Ringa-Lea Bando W196 had 33,170 ME lbs of milk with 3.6% 1,194 lbs of fat and 3.1% 1,028 lbs of protein. All four of the Bando daughters at Ringa-Lea have an average of 29,095 ME lbs of milk, with actual test of 3.7% and 671 lbs fat, 3.1% and 521 lbs protein.

With the onset of genomic testing, Nathan has increased the confidence he has in using Semex Premier™ young sires.



The Premier™ Club program offers three partner levels: Standard, Silver and Gold. Your Premier™ Consultant will match your needs and commitment to one of these levels with significant rewards available:

- Up to \$15 per each calving ease record reported
- Up to \$15 for each heifer identified
- Up to \$50 for each milking daughter
- Participation in Holstein USA's S.E.T. classification
- Regular meetings with a specialized Premier™ consultant
- Regular herd matings with the ProMate™ mating system
- Competitive proven sire semen pricing

Added Value of Using Semex Sires/500 Doses at Ringa-Lea

	Conception Rate	Exp # PGs
Semex Sires	41.0	205
Competitor	37.0	185
	Value/PG	Total PG Value
Semex Sires	\$278*	\$56,990
Competitor	\$278*	\$51,430
	Added PG Value	Projected Semex Value/Dose Advantage
Semex Sires	\$5,560	\$11.12

* (DeVries, 2006)

"I believe genomics will help weed out the lower end bulls before they get to the studs. The young sires that are coming out today have good information that allows the Premier™ young sire herds to not only prove, but to keep the balance confirmed in the herd."



Nathan Odden, Ringa-Lea Dairy
Photos by Nick Sarbacker

Knowing that all Semex Premier™ sires are genomic tested and screened prior to sampling, Nathan believes he will have an even more consistent group of daughters to work with from his Semex Premier™ young sires.

Nathan has continued to increase the use of Semex sires in his herd over the past few years. With more Semex Premier™ daughters now milking in his herd, he plans to continue to increase his use of Premier™ young sires in the future.



Bando Daughters at Ringa-Lea:
Ringa-Lea Bando 163 & Ringa-Lea Bando 196

Semex is now accepting Farm Plan as a payment option



Semex is now working with Farm Plan to provide you with reliable purchasing power and payment terms that fit your operation. A Preferred multi-use Farm Plan account will provide you with:

- Reliable purchasing power
- Flexible payment terms
- Convenience of having purchases from multiple Farm Plan retailers consolidated onto one multi-use account
- Account Management Tools
- An Annual Purchase Summary of all your Farm Plan purchases

It's easy to apply:

Visit **FarmPlan.com** to complete an online application.

Call **1-800-356-9033** to have an application mailed to you.

For more information, contact your local Semex representative.



YOUNG SIRES WITH A COMPETITIVE EDGE



TWO SONS FROM THE 2009 WDE SUPREME & RWF RESERVE GRAND CHAMPION

Known for delivering elite, high type and show ring success, Semex is pleased to introduce two high Genomax™ GTPI sons of 2009 WDE Supreme & RWF Reserve Grand Champion Frosty to its lineup! These two young bulls join elite company as Semex Designer Series™ sires, promising to deliver the success breeders rely on Semex to deliver... High scoring cows, deep maternal lines, longevity, profitability and show-winning individuals!

Hls Famous Dam:

Harvue Roy Frosty EX-95-5YR-USA

2009 WDE Supreme Champion & RWF Res. Grand Champion
2009 Unanimous All-American & All-Canadian 5-Yr-Old
2009 Holstein World's People's Choice Cow
2007 Reserve Grand & Intermediate Champion WDE
2007 All-American Sr-3-Yr-Old

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DUCKETT-SA FREMONT

GOLDWYN x ROY

0 2 0 0 H O 0 2 5 5 3

DUCKETT-SA FEDERAL

SHOTTLE x ROY



**COMING IN APRIL...
FROSTY'S ONLY GOLDWYN SON**



**COMING IN AUGUST...
FROSTY'S HIGHEST GTPI &
GLPI SHOTTLE SON**





THRULANE JAMES ROSE EX-97-2E-CAN

Holstein International's World Champion 2009 & 2008
 Grand Champion Royal Winter Fair 2009, 2008 & 2006
 Res. Grand Champion International Holstein Show 2009
 Grand Champion International Holstein Show 2008
 All-American Aged Cow 2009 & 2008
 All-Canadian Mature Cow 2009 & 2008
 Owned & Exhibited by Ferme Pierre Boulet, Montmagny, Quebec, Canada

Code 200HO Dominates

Photo by Creative Imagery

In January 2010, Holstein International named Semex's Braedale Goldwyn the global "Premier Sire of 2009." This honor links the success Goldwyn had in all corners of the world under one common title. With a reported 56 championships in 2009 worldwide, Goldwyn, however, is only one part of the success stud code 200HO felt in the 2009 show season.

Like no other time before, Semex sires, known for delivering thousands of show champions at every level, celebrated more victories than any other in North America. Of the possible 186 nominations in the individual cow and heifer classes on both sides of the border, 114 were Semex sires. More impressive still, these 114 animals were represented by 24 different Semex sires.



In the All-American competition, Semex sires netted 54 or 56% of all nominations and 31 or 66% of all awards given in the competition. Four repeat winners, one of which was a repeating Unanimous All-American, highlighted these winnings.

The 2009 All-Canadian contest posted similar results with Semex sires capturing 67% of all nominations. These 60 nominees were sired by 18 different Semex sires – showing not only domination, but over three times the diversity in sires than any other stud. Looking at the winners, 67%

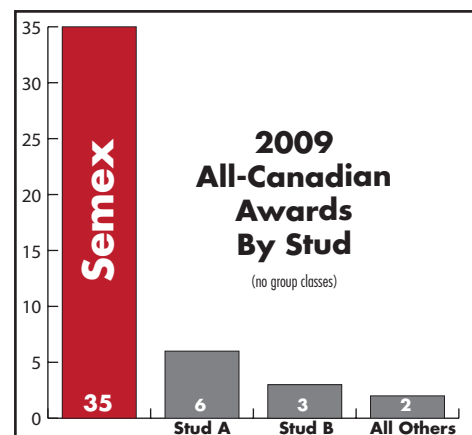
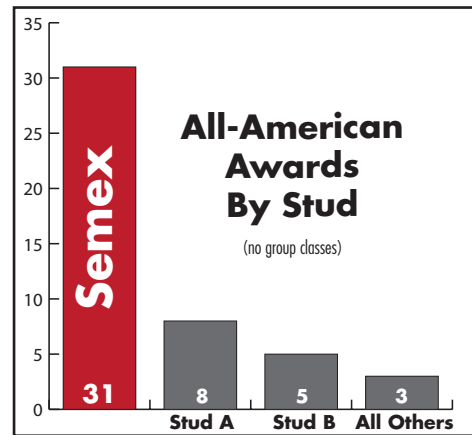
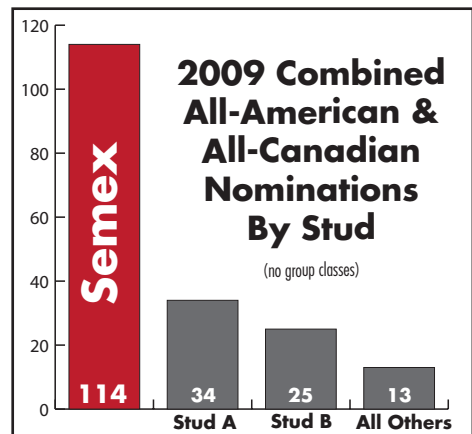
were Semex sired, including one tie, underscoring Semex success. With results now tabulated, it's safe to say that Semex sires were the runaway winners of the 2009 show season.

Led by the tremendous Goldwyn daughters, Semex sired daughters captured 70% of the awards given in both contests. Looking closer at these 65 award winners, it's easy to see satisfaction in Semex sires from young heifer classes to mature cow classes.

Semex sires dominated at each and every level of these national competitions, demonstrating their tremendous power and longevity throughout with names

such as:
 0200HO00113 Cedarwal Spirte,
 0072HO01758 Comestar Lheros,
 0200HO03227 EK-Oseeana Aspen,
 0200HO03280 Gillette Final Cut
 0200HO01677 Regancrest Dolman,
 0200HO04608 Regancrest Mr Samuelo and other Semex legends dotting the ledgers.

These sires epitomize balanced breeding and elite show type, and are the next generation of great Semex show sires, available through Semex's Designer Series™ program. Ask your Semex representative how to put these sires to work creating the next generation of greats for your herd today.



Attaining maximum expression of genetic

Part 3: Nourishing & managing heifers

Alex Bach, IRTA, Department of Ruminant Production, Barcelona, Spain



Pregnant replacement heifers are the most valuable animals within the dairy herd as they carry all the investment in nutrition, health, labor, etc... And, they have yet to start returning that investment. Careful, systematic management of the pregnant replacement results in tremendous benefits.

Key areas to focus attention on include pre-calving nutrition and management.

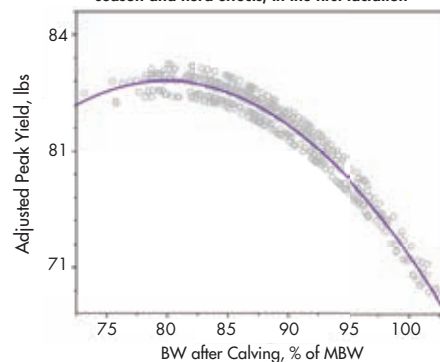
A commonly recommended target for raising dairy heifers under intensive conditions advocates achieving a first calving between 22 and 24 months with a BW (birth weight) after calving of about 1350 lb.

However, this figure should not be considered a fixed value, as not all cows are the same size and frame when adult. For this reason, the use of mature body weight (MBW) has been proposed as a measure to target weights for growing heifers. Current recommendations suggest that optimum BW after first calving to maximize milk yield should be 82% of the MBW (National Research Council [NRC], 2001). Using this concept, heifers should be bred and calve at similar ages but with different BW (depending on their projected mature body size).

Although the MBW of current mature cows (3rd lactation) in the herd could be used as a proxy to estimate future MBW of current growing heifers, there are several factors that influence MBW and this may have changed over the past 4-5 years (time needed for cows to reach their MBW). In addition, the use of MBW presumes that genetic variability among animals is low, but there could

Figure 1. Relationship between BW after calving (as a percent of predicted mature BW) and milk peak yield (adjusted for season and herd effects) in the first lactation

Figure 1. Relationship between BW after calving (as a percent of predicted mature BW) and milk peak yield (adjusted for season and herd effects) in the first lactation



be as much dispersion in MBW among cows within the Holstein breed as between cows among different breeds (i.e. Holstein vs. Jersey). Thus, using a herd-average MBW based on mature, present animals does not seem very accurate.

An alternative method to predict MBW would consist of utilizing the growth curve of heifers up to 250 days of life using non-linear modeling. The use of such a mathematical approach is able to predict MBW within an acceptable range. Figure 1, shows the relationship between BW after

potential: during late pregnancy



calving and peak yield in first lactation. From this Figure, it can be concluded that optimum BW after calving is closer to 80% than the commonly recommended 82%. This result is in agreement with previous chapters of this series on heifers that highlight that rapid growths after breeding are negatively correlated with future milk yield, and ADG (average daily gain) between breeding and calving should not exceed 1.8 lb/d. In fact, an adequate growth towards the end of pregnancy would be around 1.54-1.65 lb/d.

Therefore, nutrition during the two months preceding calving should provide sufficient nutrients to ensure an ADG of 1.65 lb/d. About 88% of this gain will be the result of fetal growth and its supporting structures (uterus, placenta, and fluids), whereas the remaining 12% (about 0.20 lb/d) would correspond to the continued growth and development of the heifer.

Most of the health problems in the high-producing dairy cow, of both metabolic and infectious nature, occur during early lactation and have been related to low energy intake and negative energy balance, leading to ketosis and fatty liver as the two most common metabolic upsets. It is believed that the majority of these health problems

originate during the peri-parturient period. Traditionally, it has been recommended to feed high-energy rations during the pre-calving period to minimize body fat mobilization, ketosis, and fatty liver after calving and adapt rumen microflora to high energy levels as those fed during lactation.



However, overfeeding heifers to the point that they get fat can cause calving difficulties and metabolic problems postpartum. Nevertheless, the NRC (2001) recommendations advocate for a relatively high energy-dense ration (0.73 Mcal/lb) before calving (with the intention of adapting the animal to a lactating ration and minimizing postpartum metabolic problems). However, this relatively high energy content in the diet

might actually be detrimental to the heifer. An average pre-partum heifer requires less than 15 Mcal of NEI (net energy for lactation) per day, and feeding a 0.73 Mcal/lb ration would provide more than 17 Mcal of NEI per day.

Recent data from the University of Illinois would suggest that cows fed using current recommendations allowing ad libitum access to high-energy diets (0.73 Mcal/lb) during the dry period show a greater decrease in feed intake

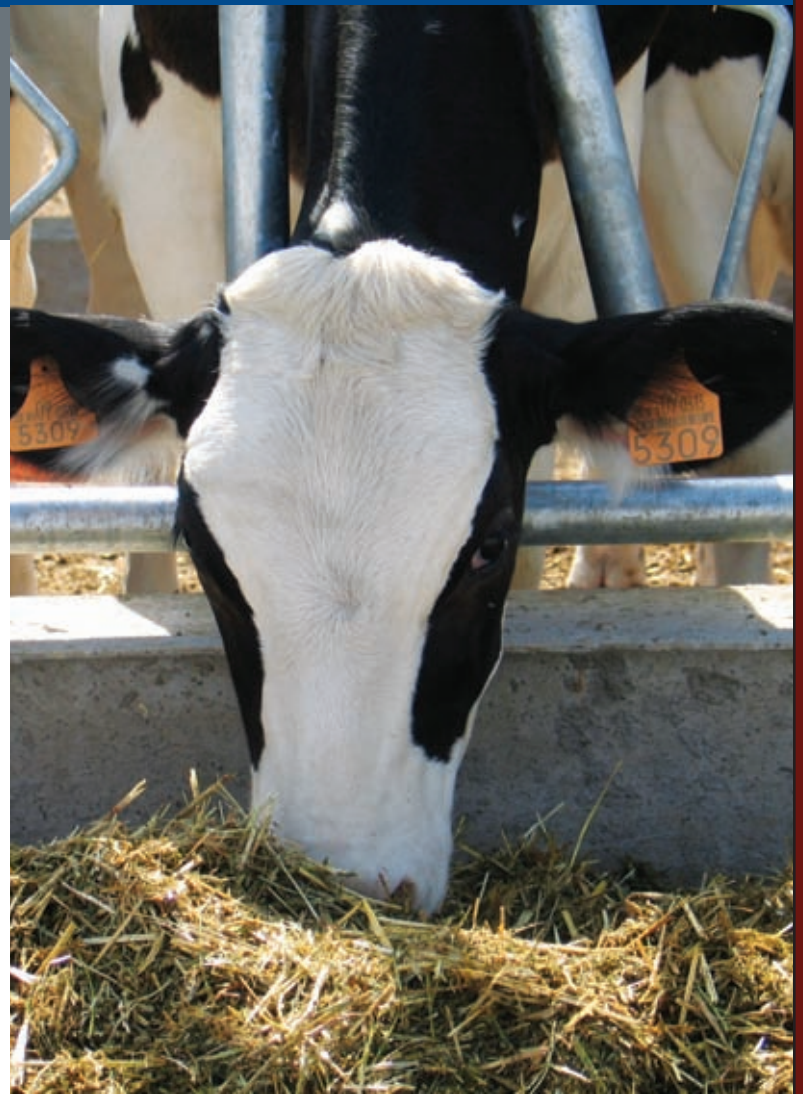
before parturition and a lower feed intake postpartum than those receiving low-energy diets. Furthermore, recent studies suggest that cows that are moderately overfed during the dry period, even without becoming obese, may be placed at greater risk for peri-parturient health problems. Therefore, it seems reasonable to feed pre-calving heifers rations containing about 0.64 Mcal/lb of NEI to supply their energy needs (15 Mcal/d of NEI). Regarding protein, rations during the pre-calving period of heifer should be at least 15.5% (DM basis) to ensure there is sufficient metabolizable protein to sustain fetal growth as well as heifer development.

Most or all the nutritional needs of pre-calving heifers can be achieved with high quality forage (alfalfa or grass, either as hay or haylage) plus a small supplementation in the form of corn, corn gluten feed, soybean hulls or barley, and a protein source such as soybean meal or canola meal. As usual, a balanced complete high selenium and vitamin E premix should be part of the final ration.

A small, but important aspect of the feeding the pre-calving heifer is related to the offspring. Evolution mechanisms in nature are aimed to maximize the surviving odds of the progeny. These mechanisms have been thought to occur randomly, but there is evidence that shows that the nutrition of the dam does have some influence in the surviving odds (or degree of adaptation) of the offspring to the environment. A mechanism participating in ensuring that the offspring is well adapted to the environment is what is known as fetal programming. Part of the changes associated with fetal programming seem to be due to epigenetics, which is responsible for heritable changes in phenotype caused by changes in gene expression rather than modifications of the underlying DNA sequence (achieved through genetic selection).

For instance, these mechanisms have been associated with an observed increased efficiency of nutrient utilization in the offspring from undernourished dams compared to those from overfed ones. There is very little research in this topic, but fetal programming could be a further argument to avoid overfeeding pre-calving heifers (as their progeny might be more efficient in converting nutrients to milk).

In addition to an appropriate nutritional program, heifers should be kept and calve in a clean and dry area that can easily be observed four to six times a day. Packed straw bedding is recommended rather than free-stalls. Evidence from Wisconsin suggest that it is desirable to minimize group changes around calving, and thus keeping heifers in the same pen throughout all the pre-calving period is highly recommended. Overcrowding should not occur during this period, and it is ideal to ensure a stocking density of 80% (8 heifers for every 10 feeding spaces –at least 30 in/feeding space-) and at least 45 ft² of bedding space for each animal.



Summary

Pregnant replacement heifers are the most valuable animals in the dairy herd and nutrition and management during the last weeks before calving will have an important impact on the magnitude of the return on the investment that a particular heifer will contribute to the herd economics. To maximize peak yield, heifers should calve with about 80% of their predicted mature BW. Avoiding fattening, and thus providing excessively hot rations during the pre-calving period should be avoided. An optimal pre-calving diet would supply 0.64 Mcal/lb of NEI and 15.5% CP. Pre-calving heifers should be housed in straw-bedded yards and observed four or six times daily. Changing animals from pens should be minimized and thus, heifers should calve in groups without undergoing a pen change before calving.

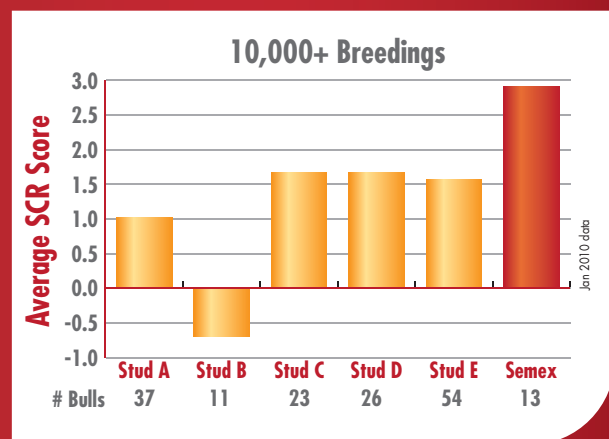
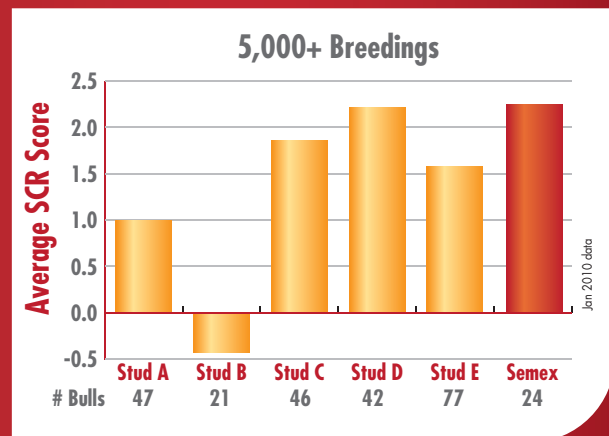


Semex Repromax™ Sires Work Hard... Time After Time

Trusting Semex and its high fertility Repromax™ sires to get your cows pregnant has never been easier. In the January 2010 Sire Conception Rate (SCR) data published by the USDA, Semex sires scored higher than all other studs in two categories that show real results on real dairies... 5,000 breedings and more and 10,000 breedings and more.

As the world's only international fertility evaluation Repromax™ combines SCR, ATA and Non-Return data. Known as Semex Repromax™ sires, these are highly reliable bulls proven to be high fertility sires, with no genetic sacrifices.

STUD FERTILITY COMPARISON



EVERY DOSE COUNTS

ai24™

Reliable & Accurate

With Results You Can Count On



Highly Reliable

- ▷ 450,000 collars in use on 2500 farms worldwide
- ▷ In use coast to coast in USA



Unparalleled Accuracy

- ▷ 85-90% Heat Detection Rate



Since 2004 Real Results On Real Dairies Worldwide Tell Us It Works:

- ▷ Increased Preg Rates of 3.2% or higher
- ▷ Decreased Days Open of +25 days
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- ▷ Up to 8% More of the Herd Confirmed Pregnant
- ▷ Less time spent in headlocks & more time making milk



Micro and Semex are partnering to provide dairy management solutions to increase your profits!

Contact your Semex representative for more information:

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