Top fertility can be achieved coast to coast

Herd owners in California, South Dakota, Vermont, and Wisconsin shared insight on how they earned top honors in this year’s Dairy Cattle Reproduction Council’s award competition.

EVEN as reproductive concepts continue to evolve on dairy farms, one matter remains constant—it takes teams and it takes people to create successful outcomes. That message was loud and clear when we visited farms that won this year’s 12th annual Dairy Cattle Reproduction Council (DCRC) award competition.

In this first round table of the season, the six Platinum winning herds in the DCRC awards competition share their insight on reproduction. These herds sorted themselves to the top from 105 nominated herds—the second most nominations to date. In the final phase of judging, a combination of statistical analysis and thorough record inspection helped the judging panel evaluate the 41 semifinalists and eventually select the top 24 herds. Throughout the entire process, judges only viewed each farm’s data and did not actually learn of herd or nominator names until the final tabulations were completed by the awards’ committee chair. Following the judging process, Hoard’s Dairyman editorial team members assisted DCRC by personally visiting each of the Platinum-winning herds.

What enhancements have you made to your breeding program?

Britannia: Our three biggest enhancements:
1. Double ovsynch.
2. Two prostaglandins in the final week before breeding, whether it be on double ovsynch or regular ovsynch.
3. Waiting 20 to 24 hours after administering GnRH for sexed semen use.

To keep the voluntary waiting period or VWP in a tight window, our heifers are synchronized with two prostaglandins, tail chalking, and then bred after showing a heat to the second prostaglandin.

Holmesville: All cows are ultrasound scanned by our veterinarian, B.D. Jones, at 35 and 55 days after breeding. If they are open and have a corpus luteum (CL), cows are resynchronized with an ovsynch, where we give GnRH on the day of the vet check, prostaglandin seven days later, GnRH 2-1/2 days after the prostaglandin, and then breed the next day. If the cow is open with no CL, we give GnRH and recheck for a CL the next week, at which time the cow will be ovsynched.

If our heifers are not bred by 13-1/2 months, we will ultrasonate them. Heifers with CLs are given prostaglandin; heifers with no structure are given GnRH and checked in one week for a CL.

We have been very happy with our conception and pregnancy rates with this system. Overall herd pregnancy rate is 40 percent, heat detection rate is 76 percent, and conception rate is 53 percent.

Kayhart: In 2013, we decided to revamp our timed A.I. programs after many years of using a straight presynch-ovsynch program. Researchers at that time seemed to be tweaking protocols a lot as they kept gaining a better understanding of the dairy cow’s reproductive cycle.

I kept reading that the double ovsynch program had a distinct advantage over other protocols. But for some reason, this was true only when used on first-lactation animals. At that time, we decided to use double ovsynch on first-lactation animals and G-6-G on second-lactation and older cows. We haven’t really drifted from that program since. For the last 12 months, our double ovsynch cows have had a 59 percent conception rate on first service, and the G-6-G for older cows has been at 48 percent.

About 2-1/2 years ago, we added an additional prostaglandin 24 hours after the final prostaglandin during the first insemination week. Essentially, we are giving a prostaglandin on Monday and another on Tuesday. This made a measurable difference in both protocol programs but a bigger gain in the G-6-G program.

A few years ago, we started giving GnRH the Monday prior to pregnancy diagnosis. We do pregnancy checks every Monday. In this setup, GnRH is only given during months of challenging summertime breeding... typically for us, June until late October. If a cow is diagnosed open and has a CL, she will be given prostaglandin and bred Thursday.

Results show a 41 percent conception rate here.

If there is no CL present, the cow will receive another dose of GnRH and be rechecked the following Monday. The cow will usually have a CL at this point, will be given prostaglandin, and will be bred on Thursday. This has been at 46 percent conception for the last 12 months.

Red Top: In May 2018, we began using double ovsynch for first service on all milk cows. Pregnancy rates were already in the mid-30s at that time, but because we had struggled with preg rates in the summer of 2017, I did not want a repeat in the summer of 2018.

Ironically, I also raised my sexed semen usage when we implemented double ovsynch, and not only maintained, but improved to upper 30 preg rates through the summer. Originally, my intention was to use double ovsynch as a summer tool, but pregnancy rates in the 40-plus range have forced me to stay the course.

Schilling: Heifers enter the breeding pen at 15 months of age and are bred by visual inspection based on the Estratapatch. Heifers are ultrasound scanned at 28 days post insemination, and if found open with a CL, are given prostaglandin.

Lactating cows are all bred on an ovsynch 48-hour program for first service. All cows are started on ovsynch at 77 days in milk or DIM. GnRH1 is given Tuesday morning; the first prostaglandin is given seven days later on Tuesday morning; a second prostaglandin is administered 24 hours later on Wednesday morning; GnRH2 is given 48 hours after the first prostaglandin on Thursday morning; and breeding is done Thursday... eight hours after the morning GnRH.

Open cows are resynched with a similar program at herd health. If a CL is present, we initiate ovsynch. If a CL is not present, GnRH is given and ovsynch is started seven days later.

Our overall pregnancy rate with these methods is currently 42 percent with an overall 57 percent conception rate. Approximately 62 percent of our breedings are synchronized, with a 62 percent success, they believe there is always room for improvement, “We gained a 15 percent boost in conception rates after an A.I. refresher course,” said Kevin.

Showed above are (L to R): kneeling, Cruz Ordonez Lopez and Oscar Mauricio Martinez; standing, Corale Dorn, D.V.M., Delfs Veterinary Service; Kevin Pearson; Ben Pearson; Corey Caraway, Zoetis; and Brandon Thesing, Select Sires. Additional presenters Tim and Penny and son, Travis, and his wife, Stephanie, own the dairy.

A voluntary waiting period (VWP) of 88 days is the longest calving-to-breeding period among all the finalists in this year’s competition. “We raised the voluntary waiting period by 10 days to try and improve our peak milk,” explained Travis Holmes of Holmesville Dairy, Argyle, Wis. The 470 Holstein winners averaged 28,250 M, 1,026 F, and 829 P. The Holmesville farm team includes (L to R): Mike Van Schyndle, Spensley Feed Sales nutritionist; Cody James, Holmesville Dairy employee; B.J. Jones, D.V.M., Center Hill Veterinary Clinic; Maureen Thompson, Holmesville Dairy calf feeder; Riley, Claire, Hunter, Travis, Stephanie, and Tim Holmes. Parents Tim and Penny and son, Travis, and his wife, Stephanie, own the dairy.

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conception rate; 7 percent of cows are classified as standing heat, with a 59 percent conception rate; and 28 percent are classified as chalk breedings, with a 46 percent conception rate.

Wenzel: In the past, we used a presynch program. Currently, we use double ovsynch, which has improved conception almost 10 percent. The only change we made to the program was to add a third prostaglandin. All checked open cows are standard resynch.

Who does your A.I. breeding?

Britannia: Both my brother and I do all the breeding on the farm. On timed A.I. breeding days (Fridays), we do it together. Most weekdays, Ben breeds the standing heats using the AM-PM breeding rule unless he is gone, and then I do it.

Red Top: We breed once a day from 6 a.m. to 9 a.m. Cows are locked in headlocks when they return from the parlor and are typically locked for 30 minutes or less. We do have a formula based off of pregnancies per week that we use to pay monthly bonuses.

Schilling: Cows and heifers are bred via once-a-day service provided by Genex lead technician Tim Heiring.

Wenzel: A Genex technician, Eric Riesterer, does all the breeding and tail painting on the dairy via once-a-day service.

How do you deal with problem cows?

Britannia: If a cow isn’t bred by 180 DIM, then she is put on the DNB (do not breed) list. The only exceptions are exceptionally high milkers that may be allowed one more service up to 200 DIM. Having a better preg rate has allowed us to drop it to 180 DIM cutoff. Also, after 150 DIM not bred, I start to look at milk yield, too.

Any problems with cystic cows, which our heat detection system or the vet picks up, we use a CIDR program (progestosterone insert) to try and get them pregnant. We do not use a cleanup bull at the dairy for safety first, and second, I feel from the results we are getting that we would not gain anything from a cleanup bull. However, our heifer grower runs a cleanup bull after fourth service.

Holmesville: If a cow is having trouble becoming pregnant, as determined at vet check, we will then use the ovsynch programs. Once a cow is over 200 DIM, or under 75 pounds of milk and open, we do not breed them.

Kah-yart: We have not had a bull on the farm since 1984. If we have cystic cows, we will usually try multiple doses of GnRH. If we still have no success, we will try using a CIDR. Most times, these are our problem cows and a CIDR won’t fix their problem.

We generally stop A.I. breeding a cow at 200 DIM. We also look at production levels when they get out that far. If the cow is making milk in excess of 100 pounds per day, we may try once more. Overall, I would argue that we probably need to consider moving this number a bit lower in the future.

Red Top: We do not use bulls on the dairy. We do run a bull with pregnant heifers to cover anything that might miscarriage. Virgin heifers are bred three times to sexed semen, then three times to conventional. Anything open after that is sold. Mature cows are bred five times or up to 200 DIM. Those still open are reevaluated, and we either continue breeding them or assign them for DNB if they return to estrus. This all depends on quality and age of the cow. On our dairy, the DNB population is a small group. Typically less than 1 percent of the herd.

Schilling: We try to identify problem cows early and stop breeding them. Cows are considered for a “do not breed” classification when they are open for greater than 180 DIM and have lower milk production. When a DNB cow’s milk production drops below 85 pounds, it is considered for culling. Cows may be classified DNB earlier in lactation based on age, production, or mobility concerns.

Wenzel: After four services of timed A.I., the cows milk production and DIM is taken into consideration. If we are too far out postcalving, or fail below our herd average, we will DNB them.

Do you use sexed semen?

Britannia: Yes, we use sexed semen on both heifers and cows. All heifers get two tries with sexed, two tries with Angus beef, and then move into the bull pen.

For cows, we breed all first- and second-lactation cows first service to sexed semen. Some young cows may get a second try, but most will get conventional beef semen after first service. Cows in the third lactation or greater all get bred with beef semen.

The economic challenges with both dairying and bull calf sales have pushed us this way. The Jersey bull calf was becoming very hard to sell and we would lose money on them. Also, any extra heifers were a burden on cash flow during low milk prices.

Holmesville: For our heifers, we will use 90 percent sexed semen on the first and second services and then we use beef semen. Conception rates for sexed semen is 52 percent and 60 percent for conventional semen in heifers. We have not been using sexed semen in the cows, but have started to implement beef semen after the first two services.

Historically, we have produced excess heifers, which have been raised and sold for dairy purposes. As this market has diminished, we are using more...
beef semen to capitalize on better prices for our calves and to reduce the amount of replacements that are being raised.

First-lactation cows are bred twice to top-end conventional Holstein bulls, and after the second service they are bred to beef bulls. Sexed semen has helped give us a steady supply of heifers. We don’t currently use genomic testing to identify superior animals in our herd. We have a specific number of heifer calves that we can feed into our program on a weekly basis. By using the sexed semen on heifers, we get most of our replacement animals from this pool.

Sexed semen has historically been used for first service on all heifers, before switching to conventional semen on second service. This past spring, with the assistance of our Genex team, we created a mating program using a lot more beef semen on our cows and less conventional semen. At the same time, we began using more sexed semen on heifers for both first and second services. As we learn what happens with the beef program, we may adjust these levels.

Over the last 12 months, the 673 services of conventional semen settled at a 65 percent conception rate and the sexed semen was a very close 62 percent.

Red Top: Virgin heifers are bred three times to sexed semen, and roughly 40 percent of the milking population are bred two times to sexed semen. Virgin heifers are followed up with three conventional services. Milk cows are bred to sexed semen follow up with Limousin-beef breed semen.

This approach excludes the top 2 to 3 percent of high-index cows. These elite herdmates are hand mated to high-indexing conventional bulls with exceptional daughter pregnancy rate (DPR) and cow conception rate (COR). These “elites” are coded in Dairy Comp 305 and are bred third and fourth service to this conventional bull, followed by beef semen. Cows that are not mated to sexed semen are bred to beef beginning at first service.

Overall, 70 percent of first-lactation milk cows are mated to sexed semen: 20 percent, second, and 10 percent, third-plus. This updated strategy resulted after feeding a surplus of replacements and the subsequent rise in feeding costs. Working with Select Sires, and utilizing its optimal genetic pathways (OGP) program, has been key to developing, evaluating, and moving forward with this strategy. The OGP has taken any guess work out of transitioning to and calculating the percentage of animals that need to be mated in each group.

Schilling: We use female-sexed semen on virgin heifers for the first two services. For services third and greater, conventional semen is used, and if they do not settle, they will be marked do not breed. We also began using beef semen on cows based on age and net merit ranking.

Conception rate of sexed semen in 2-year-olds is 42 percent, and conventional semen is 60 percent. We were using sexed semen on 2-year-olds, but we discontinued this due to the poorer fertility and the need to produce fewer heifers overall on our farm. Conception rate of sexed semen in 2-year-olds is 42 percent, and conventional semen is 60 percent.

We have continued to use sexed semen on our heifers as we feel that our 2-year-old calves in with fewer difficulties due to the smaller calf size of the heifer calves.

Also, to reduce the total number of heifers being born and to improve the marketability of the calves, we have started using beef sires in our A.I. program. Beef semen is used on all second-lactation and greater cows and also on a limited basis in heifers for third services. Heifers are classified as DNB if they do not breed after three services. In the cow herd, beef semen usage is currently at 46 percent.

Wenzel: Sexed semen is used on both cows and heifers. We breed the top 25 percent of the Net Merit cows to sexed semen for the first two services followed by beef until pregnant or culled due to a DNB status. The bottom 75 percent of the cows are bred to beef semen for all services. The conception rate on the sexed semen has stayed about the same as the conventional conception rate. The sexed semen usage percent has not changed with any economic changes.

How do you confirm pregnant or open status in cows?

Britannia: Every two weeks we have the veterinarian out to preg check using ultrasound. On vet days, we change our feeding routine so we can lock some groups up before milking, and then we lockup cows without a CL are given GnRH and rechecked every two weeks at the same intervals.

Red Top: Pregnancy checks are performed on farm via ultrasound by our lead herdsman beginning at 32 DLSH. Exams are done every Friday. Open cows with CLs are administered prostaglandin (Estrumate) and bred off heats. Anything not inseminated in this group gets a CIDR the following Friday and bred via a CIDR synth protocol. Open cows that do not have a CL are administered GnRH (Fortyagyl) and are put into the CIDR program the following Friday.

Schilling: Cows are ultrasound at 33 DCC to determine pregnancy. Open cows with a CL are rechecked with ovsynch with GnRH and then receive double prostaglandin 24 hours apart. Open cows without a CL are given GnRH and rechecked since last heat (DLSH), but we do recheck anything that is under 30 days carrying calf (DCC) on veterinarian day two weeks later just to confirm pregnancy. At DCC, we recheck all cows to make sure there is no early embryonic loss. The final preg check is for all pre- dry-off cows so we don’t spend money on costly dry cow therapy.

Holmesville: For pregnancy evaluation, we have our veterinarian, B.J. Jones, ultrasound them once a week on Tuesdays. We ultrasound cows at 32 days after breeding to determine if they are pregnant or open. Pregnant cows are rechecked at Day 55 to confirm the pregnancy and also checked for twins and the fetal sex. The heifer groups are also checked weekly at the same intervals.

Kayhart: Dave Rockwell is our veterinarian, and we have worked with the same veterinary clinic for well over 30 years. We have progressed with them over the years as A.I. has evolved.

In the early years, we would check every cow for a healthy reproductive tract prior to breeding. We stopped doing that about 15 years ago. Now cows are automatically enrolled in a timed A.I. program at calving and then we confirm pregnancy at 30 days postbreeding via ultrasound.

Our vet is a very valuable member of our reproductive team. If a cow is deemed open, he tells us what structures are on the ovaries so we can tailor our strategies more effectively.

Ultrasound also allows us to identify cows carrying twins, and we will treat them differently in terms of dry period length and time spent in the refresh pen. All pregnancies are reconfirmed at 60 days when our vet also determines the sex of the calf if possible. He has proven to be remarkably accurate in his diagnosis.

A total farm transformation made in December 2013 helped set up Wenzel Hilltop Dairy for success. “All cows have sand-bedded freestalls, rubber feed alleys and holding areas, along with grooved floors everywhere else,” explained Kevin Wenzel of Hilbert, Wis. “We have fans throughout our new tunnel-ventilated barn and continue to monitor curtains in our natural-ventilated barns for heat and light abatement,” he went on to say of his 1,000-cow Holstein herd that averages over 30,000 pounds of milk. Shown above are members of the farm team (L to R): Judy, Kevin, and Jescia Wenzel; employees Jennifer Bartel and Jaime Rayo-Laranzu; and Genex staff- ers Jeffrey Lutz and Eric Resterer. It’s Resterer who heads up A.I. breeding, while Lyle Holschbach, D.V.M., of Veterinary Associates conducts reproductive exams.
the following week for a CL. Pregnant cows are re-ultrasonated at 60 DCC to confirm pregnancy, determine fetal sex, and to check for twins.

Wenzel: Confirmation of pregnancy is done during herd check on a weekly basis with ultrasound. This is done at 39 days postbreeding. We recheck at 80 DCC for early embryonic death. One final predry check is done at 193 DCC. Our vet does all checks via ultrasound.

What metrics do you monitor?

Britannia: We evaluate biweekly after predry check, after new sire proofs, or when changing the herd mating. The list includes:

- 21 day pregnancy rate.
- Heat detection rate: Like to see this in the mid to upper 70 percent range. If it drops lower, then we know something isn't right with the heat detection system.
- Conception by number of times bred: We like to see first service in the mid to upper 50 percent range. It makes it easier if you are getting over half your herd pregnant on the service.
- Conception by breeding code: For example, sexed semen or ovynch.
- Conception by sire: We keep a close eye on this metric as we use newly released sexed genomic sires, and if they don't settle for us, then they are out of the mating system.
- Sire PRP rates: We try to use positive DPR sires.
- VWP for the heifers.

Holmesville: We watch pregnancy rates on a regular basis. We also monitor weekly our palpation rates for pregnancy as that typically is the first indicator if breeding isn't going well. We have quarterly team meetings where our farm consultant, Rod Wautlet, and our veterinarian, B.J. Jones, will thoroughly evaluate our conception rates in both heifers and cows.

Kayhart: Pregnancy rate tops our list. For years we resided in the mid-20 percent range and had set a goal of getting to 30 percent. We achieved that goal sometime in 2017, and the current rolling 12 month average is about 34 percent. The next goal is 40 percent. Dedicated people, and further refining of our timed A.I. programs based on evolving research, will help us get there. The following are metrics we track on a weekly basis:

- Service rate: goal is to be around 65 percent.
- Sire conception of individual sires: as most of the bulls we are using have genomic-only proofs, there is very little data on sire fertility at first.
- Days open in herd: has trended from around 115 to 120 days to the current 102 days.
- Palpation rate: goal is 75 percent. That gets challenging to achieve in the summer months.
- Monitor reproductive performance of different timed A.I. programs.

Red Top: We monitor the following metrics on a weekly basis:

- Percent pregnant at pregnancy check.
- Overall pregnancy rate and pregnancy rate by service and by lactation.
- Conception rates by service on virgin heifers.
- Days open.
- Age at freshening.
- Conception rate by technician is checked on occasion to ensure consistency.

Schilling: We closely track the following:

- Pregnancy rate — monitored weekly.
- Conception rates by breeding code and technician — monitored weekly.
- Conception rates by breeding code and technician — monitored weekly.
- Abortion and early embryonic death rate — weekly after herd check.
- Days in milk to first breeding — weekly.
- Fresh cow starts — monthly.
- Feed intakes, both dry matter intakes and residual weight backs — daily.
- Heat detection rate.
- Sexed semen versus conventional semen conception rates — weekly in the heifers.

Wenzel: We utilize our daily production reports and observe all of the following criteria on a daily or weekly basis:

- Body condition
- Production
- Udder health
- Legs and back condition
- Number of lactations
- Treatment history

What insight do you have for others?

Britannia: If you chose to do double ovynch, be fully committed. It’s a lot of time and don’t short-cut the protocols. For us, it worked best with the two prostaglandins the final week before breeding. It’s a pain, but you can breed with sexed semen 20 days prior to last GnRH. This cut down the sexed semen bill due to better conception.

Make sure you are covering all the basics:
- Good transition through the fresh pen
- Good cow comfort
- Good ventilation

Don’t overcrowd your breeding pens. Also, don’t be embarrassed to do A.I. retraining, as my brother gained 15 percent conception after retraining.

Holmesville: Some advice that we can give to other producers looking to improve herd reproduction is to use all the people resources you can to maximize your herd fertility. We feel the breeding is a result of a total team approach from the employee, nutritionist, veterinarian, and breeding technologists. Quarterly team meetings have helped keep our group on the same page. Everyone needs to be a team to have a successful breeding program.

Kayhart: It all boils down to people and consistency. We are so fortunate to have people working with us who value breeding cows and put tremendous effort into it.

I firmly believe that reproduction is one of the main drivers of profitability on the dairy. You can have the best facilities in the world, but if you don’t have the right people to work those facilities, you will struggle to achieve success. That being said, it is important to have your facilities set up so that people can breed and work with cows in an efficient manner as possible. Not having headlocks is fine, but make sure you have ways to corral and catch animals so that people can do their job correctly.

Red Top: It might be the breeder, but look closely at all aspects of herd health and reproduction. Not saying that everyone should be expected to always strive for excellence, but we often overlook opportunities because we are blinded by jumping to conclusions. Take the time to do the homework.

Challenge yourself, challenge your nutritionist, challenge your vet, and challenge everyone on the grounds responsible for caring for and breeding that animal. Leave not even the smallest of details overlooked, and when things are going well, try to do better.

Schilling: We feel cow comfort, foot health, cooling, nutrition, and fresh cow care are essential for a successful reproductive program. All factors depend on your respective conditions and if you don’t have the right people to work those facilities, you will struggle to achieve success. That being said, it is important to have your facilities set up so that people can breed and work with cows in an efficient manner as possible. Not having headlocks is fine, but make sure you have ways to corral and catch animals so that people can do their job correctly.

Wenzel: Cow comfort and accurate record keeping on a daily basis are essential. Also, having a very consistent breeding program is a necessity. Success comes from having a good team, including breeders, employees, nutritionists, veterinarians, and farm consultants. Be willing to continue learning and, above all, produce high-quality feed.