

Message from the President



Another year is coming to a close; time sure flies! On behalf of the entire NovaVive team, I want to wish each and every one of our customers, suppliers, distributors, partners, supporters and friends—and the animals we treat—a wonderful, peace-filled holiday and healthy, productive new year!

2017 was certainly a productive year for NovaVive. We saw increased usage of all products in the markets we serve. In addition, we reached a number of corporate milestones:

1. Launched Amplimune™ in Canada (April)
2. Launched Immunocidin® Equine in the U.S. (May) and Canada (July)
3. Had *Mycoplasma bovis* study results with Amplimune™ published in a European journal (September)
4. Signed a co-operation agreement with Hoken Biotechnology for Amplimune in Asia (September)
5. Received regulatory approval for Settle® in New Zealand (October)
6. Announced a new study by Iowa State University (ISU) College of

Canadian Office Relocation

Please be advised that, effective December 21, 2017, our Canadian office will be located at:

15 Dairy Avenue
Napanee, Ontario K7R 1M4
Phone: (613) 308-9788

Veterinary Medicine using Immunocidin Equine in two cancer types (December)

Stay tuned for more exciting NovaVive accomplishments in 2018. We look forward to working with you in the new year.

Happy Amplimune™ Customers

Amplimune is proving to be a popular product among North American bovine veterinarians and their clients. Here are just a couple of examples of the feedback we've been getting about this product.

“There is no better product than Amplimune to start a newborn calf's life in the right direction. Each spring, my top-notch beef clients call for their calving supplies and Amplimune is at the top of their list, not because it starts with “A,” but rather because they know they will have healthy calves that will not need to be treated and the benefit is they just grow better. A 1 mL dose of Amplimune at birth for our spring-born beef calves sets the stage for whatever Mother Nature sends our way. Treating

calves for neonatal diarrhea and pneumonia is uncommon when Amplimune is included in newborn calf programs.”



*Dr. Delores Gockowski,
North Ridge Veterinary Svc.
(Sturgeon Lake, MN)*

“As a cattle veterinarian dealing with both organic and non-organic herds, I am aware of the need for an antibiotic alternative. Having successfully used Amplimune in organic herds, I have started using it in disease situations in non-organic herds with promising results. In two recent cases, I tried all antibiotics and nothing worked and these were both animals that were in severe

respiratory distress. I finally said ‘I'm going to try Amplimune’. I find in the severe ones, I have to give it every 48 hours. I've gone 4 or 5 treatments. It's amazing: I saw a real response sub-cu and I found by giving it more often, I'm seeing a better result.”



*Frank Mongini,
Mongini Veterinary Svc.
(Petaluma, CA)*



[NovaVive Inc.—Equine](#)

[NovaVive Inc.—Canine](#)

[NovaVive Inc.—Bovine](#)

Settle®: A Non-Antibiotic Solution for Successful Breeding

Endometritis is a major cause of infertility in horses, affecting between 15% and 43% of mares (depending upon breed/breeding practices).

Most acute uterine infections either resolve spontaneously or with appropriate therapy in the uterus. However, chronic post-breeding endometritis often persists. That's where Settle steps in.

Settle is a regulator-approved immunotherapy that is recommended as an aid in the treatment of equine endometritis. It can be administered intravenously or by sterile catheter into the uterus.

One of the major studies conducted with Settle evaluated the impact of Settle on the fertility and embryo survival rate of mares bred at the foal heat. The foal heat occurs approximately 9 days post-partum. The foal heat situation is similar to the condition seen in mares with persistent post-breeding endometritis.

In this study, 88 pregnant mares were randomly assigned to either a treatment or placebo group. All mares were treated once on the day after foaling with either Settle

Foal Heat Study with Settle®

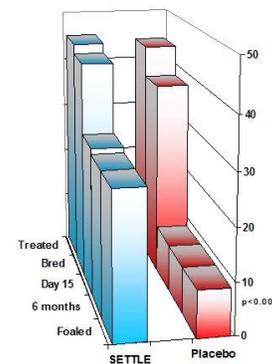
Pregnancies at 15 days, 6 months and foaling

Settle: 43/44 (98%) of mares were bred at the foal heat; 29/43 (67%) became pregnant and 28/29 (97%) foaled

Placebo: 38/44 (86%) of mares were bred at the foal heat; 9/38 (24%) became pregnant and foaled

The normal conception rate per cycle for this establishment is approximately 25%.

Foal Heat Breeding (All Mares)



Study: Evaluation of Settle on the fertility and embryo survival rate in normally reproductive mares bred at the foal heat

or placebo by IV injection and were then either hand-bred each second day of foal heat until ovulation (12 mares in each group) or pasture-bred at the foal heat to fertile stallions (32 mares in each group).

Ninety-eight (98)% of the Settle-treated mares were bred at the foal heat, with

67% becoming pregnant. All but one of the pregnant mares foaled (97%). In the placebo group, 86% of mares were bred at the foal heat, with just 24% becoming pregnant and foaling.

Note: Settle has regulatory approval in the U.S., Australia and New Zealand.

Amplimune™ for Calf Scours

Amplimune is USDA- and CFIA-approved for the reduction of clinical signs and mortality associated with *E. coli* K99 diarrhea (scours) in neonatal calves. A research article published in the European publication, [Acta Veterinaria-Beograd](#) summarizes the efficacy of the product in a controlled challenge study.

Calf diarrhea is a common disease in young animals and is the primary cause of productivity and economic losses to cattle producers worldwide. According to a report from the National Animal Health Monitoring System for U.S. dairy, more than fifty percent of the deaths of unweaned calves is attributed to severe diarrhea. Enterotoxigenic *Escherichia coli* (ETEC) strain K99 remains the most common pathogen isolated from calves which are younger than



three days of age. Dam vaccination and the use of antibiotics are the most used prevention and treatment options for calf diarrhea.

Mycobacterium Cell Wall Fraction (MCWF), the technology from which Amplimune is made, is a biological immunomodulator that has a potential in multiple animal health conditions including the treatment and prevention of infectious diseases.

In the published study, the efficacy of MCWF in reducing the severity of neonatal calf diarrhea and its associated mortality, following challenge with ETEC K99 was

evaluated. Twenty-three calves were placed into two experimental groups.

Eleven calves received a single 1 mL dose of MCWF intravenously at the onset of clinical signs of disease following challenge. Twelve non-treated, challenged calves were retained as controls. The severity and duration of diarrhea was significantly reduced in the MCWF-treated group compared to untreated controls. In addition, the mortality rate in the MCWF treated group was significantly reduced to 10% while the observed mortality in the control group reached 58%.

Visit <http://novavive.ca/bovine-research> for the full publication.