

Avivagen Announces Positive Results from New Zealand OxC-beta™ Livestock Dairy Trial for Use Against Sub-Clinical Mastitis

OTTAWA, Ontario--(BUSINESS WIRE)--February 24, 2020--Avivagen Inc. (TSXV:VIV) (“Avivagen”), a life sciences corporation focused on developing and commercializing products for livestock, companion animal and human applications that enhance feed intake and safely support immune function, thereby supporting general health and performance, is pleased to announce positive and statistically significant results from its recently completed New Zealand dairy trial that demonstrated OxC-beta™ Livestock’s contribution against sub-clinical mastitis.

Mastitis is one of the costliest diseases for treatment in the dairy industry, as animals infected with mastitis must be treated by antibiotics, requiring that the infected dairy cows be removed from milk production until fully healthy in order to ensure that their milk does not contain antibiotics.

“We have assessed a number of compounds in terms of their ability to help clear sub clinical mastitis, and this is the first time we have seen a positive effect,” said Scott McDougall, BSc(Vet), BVSc, PhD; Managing Director of Cognosco.

“In the United States alone mastitis costs dairy producers more than \$2 billion in lost production each year, due in large part to the use of product-contaminating antibiotics for treatment. A non-antibiotic solution that targets the cow’s own immune system as a strategy for preventing and treating of subclinical mastitis has the real-world potential to save billions annually for the global dairy industry¹,” says Kym Anthony, Chief Executive Officer of Avivagen. “We are extremely excited that these results show OxC-beta Livestock is a viable and safe alternative for dairy producers in high quality markets like New Zealand and others around the world. This is an important new application of OxC-beta™ Livestock that can promote both improved physical health in dairy cows and improved financial health for producers worldwide.”

The trial was conducted over 42 days at four commercial dairy farms on the North Island of New Zealand by Cognosco, a veterinary services and research group working closely with the New Zealand dairy industry. Highlights from this trial, which began in September 2019, include:

- Cows were enrolled in the study based on test results confirming the presence of subclinical mastitis.
- The dairy cows enrolled presented a somatic cell count in milk of at least 200,000 cells/mL and a positive test for the presence of mastitis-associated bacteria.
- The results are robust and statistically significant across the four different locations.
- 100% more udder-quarters from cows fed OxC-beta underwent spontaneous resolution of bacterial infection compared to quarters from cows fed the control feed containing no antibiotics. There was a 13.9% rate of resolution in the OxC-beta group compared to a 6.9% resolution rate in the control group.
- There was also a significant reduction in the number of udder-quarters progressing from subclinical to full clinical mastitis in the OxC-beta group. In the OxC-beta group only a single udder-quarter developed clinical mastitis compared to 6 udder-quarters developing the condition in the control group.

- The results of this trial build upon those of an earlier dairy study in China and demonstrate the effectiveness of supporting immune function to help improve chronic conditions that affect health and reduce productivity in dairy cows. These two trials are building out a consistent performance and use case for OxC-beta™ Livestock across geographies and in this significant dairy cow market.
- Avivagen has filed for patent protection for the use of OxC-beta™ Livestock in the treatment of dairy cows, which would protect Avivagen for the exclusive use of OxC-beta™ Livestock in this large market opportunity.

Combined with results of an earlier China dairy trial, the New Zealand trial reaffirms the significant benefits that OxC-beta™ Livestock can provide to dairy producers and support the application of OxC-beta™ Livestock in dairy cattle. Dairy is a large, high value industry and these positive trial results will contribute significantly to Avivagen's marketing efforts in countries where OxC-beta™ Livestock is already approved, such as the U.S., New Zealand and Mexico, and which are among the world's largest dairy milk producing nations². Additionally, it is estimated that mastitis in cows costs Canada's dairy industry \$400 million per year³ and has an even greater impact in other large volume markets.

About Avivagen

Avivagen is a life sciences corporation focused on developing and commercializing products for livestock, companion animal and human applications. By unlocking an overlooked facet of β -carotene activity, a path has been opened to safely and economically support immune function, thereby promoting general health and performance in animals. Avivagen is a public corporation traded on the TSX Venture Exchange under the symbol VIV and is headquartered in Ottawa, Canada, based in partnership facilities of the National Research Council of Canada and Charlottetown, Prince Edward Island. For more information, visit www.avivagen.com. The contents of the website are expressly not incorporated by reference in this press release.

About OxC-beta™ Technology and OxC-beta™ Livestock

Avivagen's OxC-beta™ technology is derived from Avivagen discoveries about β -carotene and other carotenoids, compounds that give certain fruits and vegetables their bright colours. Through support of immune function the technology provides a non-antibiotic means of promoting health and growth. OxC-beta™ Livestock is a proprietary product shown to be an effective and economic alternative to the antibiotics commonly added to livestock feeds. The product is currently available for sale in the United States, Philippines, Taiwan, New Zealand, Thailand, Australia and Malaysia.

Avivagen's OxC-beta™ Livestock product is safe, effective and could fulfill the global mandate to remove all in-feed antibiotics as growth promoters. Numerous international livestock trials with poultry and swine using OxC-beta™ Livestock have proven that the product performs as well as, and, sometimes, in some aspects, better than in-feed antibiotics.

Forward Looking Statements

This news release includes certain forward-looking statements that are based upon the current expectations of management. Forward-looking statements involve risks and uncertainties associated with the business of Avivagen Inc. and the environment in which the business operates. Any statements contained herein that are not statements of historical facts may be deemed to be forward-looking, including those identified by the expressions “aim”, “anticipate”, “appear”, “believe”, “consider”, “could”, “estimate”, “expect”, “if”, “intend”, “goal”, “hope”, “likely”, “may”, “plan”, “possibly”, “potentially”, “pursue”, “seem”, “should”, “whether”, “will”, “would” and similar expressions. Statements set out in this news release relating to the possibility that New Zealand will use OxC-beta Livestock in dairy production, that these results will lead to expected growth of demand and sales of OxC-beta within New Zealand or other markets in general, the possibility for deployment or launch of OxC-beta™ Livestock in new jurisdictions around the world or for it to replace antibiotics in livestock feeds as well as fill a critical need for health support in certain livestock applications where antibiotics are precluded, Avivagen’s intention to accelerate market access and the commercial uptake of its OxC-beta™ Livestock product and the size of market opportunities are all forward-looking statements. These forward-looking statements are subject to a number of risks and uncertainties that could cause actual results or events to differ materially from current expectations. For instance, neither New Zealand nor any other country is under any obligation to purchase product from Avivagen or to increase its purchases and could cease or reduce its purchases at any time, inquiries from potential new customers may not result in orders for Avivagen’s products and field trials underway may not have anticipated outcomes, demand for Avivagen’s products in New Zealand and other markets in general may not continue to grow and could decline, Avivagen’s products may not gain market acceptance or regulatory approval in new jurisdictions or for new applications and may not be widely accepted as a replacement for antibiotics in livestock feeds, new market access may not occur in the timeline or manner expected by Avivagen and the market opportunities may not be as large as Avivagen anticipates due to many factors, many of which are outside of Avivagen’s control. Readers are referred to the risk factors associated with the business of Avivagen set out in Avivagen’s most recent management’s discussion and analysis of financial condition available at www.SEDAR.com. Except as required by law, Avivagen assumes no obligation to update the forward-looking statements, or to update the reasons why actual results could differ from those reflected in the forward-looking statements.

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¹ <https://thecattlesite.com/focus/thermo-fisher-scientific/2335/bovine-diagnostics-how-much-does-mastitis-cost-dairy-producers-annually>

² <https://www.betterfarming.com/online-news/400-million-year-cost-mastitis-canada%E2%80%99s-dairy-cows-61466>

³ <https://www.statista.com/statistics/268191/cow-milk-production-worldwide-top-producers/>

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