

MSc Defence

**The effect of *Saccharomyces cerevisiae* var. *boulardii* CNCMI-1079 supplementation during late gestation on colostrum and transition milk quality and offsprings health and immune function in Holstein dairy cattle**  
Marijke Boerefyn

Date: January 7th 2025 at 9:00am

The MSc Defence for Marijke Boerefyn has been scheduled for January 7th, 2025 at 9:00am. The defence will be held online via Teams and in room 141: [https://teams.microsoft.com/l/meetup-join/19%3ameeting\\_ZmViMDNkMDItN2I0Yy00ODJiLWE4MjYtNTRmZmY1Y2RjNThl%40thread.v2/0?context=%7b%22Tid%22%3a%22be62a12b-2cad-49a1-a5fa-85f4f3156a7d%22%2c%22Oid%22%3a%2212b5168f-8a81-43c7-8e53-0233159fb96d%22%7d](https://teams.microsoft.com/l/meetup-join/19%3ameeting_ZmViMDNkMDItN2I0Yy00ODJiLWE4MjYtNTRmZmY1Y2RjNThl%40thread.v2/0?context=%7b%22Tid%22%3a%22be62a12b-2cad-49a1-a5fa-85f4f3156a7d%22%2c%22Oid%22%3a%2212b5168f-8a81-43c7-8e53-0233159fb96d%22%7d)

Examining Chair: Dr. Jen Ellis

Advisor: Dr. Mike Steele

Advisory Committee Member: Dr. Lautaro Rostoll Cangiano

Additional Member: Dr. Niel Karrow

**Abstract:**

The objectives of this thesis were to evaluate the effect of *Saccharomyces cerevisiae* var. *boulardii* CNCMI-1079 maternal supplementation during late gestation (SCB;  $1.0 \times 10^{10}$  cfu/d; top dressed on TMR daily starting d -28 relative to calving) on offspring's immune function, and on colostrum quality and composition in both primiparous (PP) and multiparous (MP) Holstein dairy cows. In the first study, a total of 87 cows were enrolled (SCB n = 43; CON n = 44) and subsequent offsprings' immune status and health were evaluated. Overall, the results indicated that supplementing dams with SCB decreased  $\gamma\delta$  T cell functional receptors WC1.1 and WC1.2 at day seven of life but did not impact other immune and health parameters preweaning. The second study evaluated the colostrum and transition milk quality and composition from the cows in the same study (SCB n = 41; CON n = 44). Results from the study found that supplementation of SCB during late gestation increased colostrum fat concentration and composition. In summary, supplementing SCB during late gestation is a promising nutritional strategy to increase colostrum fat concentrations and modulate  $\gamma\delta$  T cell function in calves.