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Canadian Dairy Farmer's Willingness to Pay for Feed Efficiency and Reduced Methane Emissions

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Advancements in genomic selection have created the opportunity to select for increased feed efficiency (FE) traits and reduced methane emissions (RME) in dairy cattle. Purchased feed represents the largest (>20%) variable cost for Canadian dairy producers. In addition, there is an increasing pressure on the industry to find innovative mechanisms to abate greenhouse gas emissions. The adoption of genomic selection for FE and RME traits could prove to be a win-win scenario. In this paper, we examine Canadian dairy farmers willingness to pay (*ex-ante*) for genomic technology for feed efficient and reduced methane producing cows. Through a national survey, we elicited the dollar value that farmers would be willing to pay per straw of semen for artificial insemination (AI) and per genotyping test, if selecting and testing for FE and RME traits were available in the market. We examined various scenarios of AI and genotyping test adoption decisions. First, we find that less than 20% of producers currently genotype any of their calves for general traits. Second, over half of the respondents stated that they would not use any genomic information to select and incorporate the traits of FE and RME in their herd. Third, we find a positive average willingness to pay for the trait of FE, but a negative average willingness to pay for the trait of RME. We also find positive willingness to pay for either AI or a genotyping test, both of which included both traits. Fourth, we find a positive willingness to pay for a service that would combine AI and genotyping tests for both traits.

Preliminary results indicate that willingness to pay increases by almost 20% for every 1% reduction in the herd's feed requirement and methane emissions resulting from the use of genotyping. Increasing the effectiveness of genomic selection and the promotion of genotyping would likely aid in the adoption of this financially and environmentally beneficial technology.